Learning to read: phonological awareness and the development of reading?

A study of at-risk beginner readers with culturally and linguistically diverse backgrounds in an English-speaking school.

Joanna Holdaway

Department of Special Needs Education

UNIVERSITETET I OSLO

2007

Abstract

More and more, schools all over the world are meeting the culturally and linguistically diverse classroom. Whilst this growing phenomenon offers an abundance of new experiences and learning opportunities to students and teachers alike, it can also present some challenges. For example, children learning English as a second language (L2 Learners) and who are entering into an English-speaking school can sometimes experience difficulties in becoming familiar with the phonological system of the English language. This, coupled with the irregularities in the English writing system (orthography) can impact their ability to learn to read in the beginning stages. Several studies conducted among English monolingual beginner readers have linked phonological awareness to reading ability, with the studies conducted by Hatcher, Hulme and Ellis (1994) and Muter and Diethelm (2001) forming the foundations on which this thesis has been based.

This study assesses the impact of a phonological awareness intervention programme in developing the phonological skills of six *L2 at-risk beginner readers* aged 6-7, with the aim of preventing reading and spelling failure. L2 at-risk beginner readers were identified using the school's teacher-generated basic literacy assessments as well as through ongoing in-class observations made by the class teachers.

The study design was an adapted single-case time-series experiment (A-B-A-A) conducted over a period of ten weeks. The phonological awareness programme instruction took place from week one to week eight consecutively. At week eight, the intervention was withdrawn for a period of two weeks as a means to measure any change in the children's skill level following programme withdrawal. Time-series data measuring the development of different phonological manipulation skills was collected at the pre-test (T1), post-test (T2), and the follow-up post-test (T3) stages using the phonological awareness test battery – PhAB, (Frederickson, Frith and Reason, 1997). A running log was also kept for each child and used to record

additional qualitative data regarding individual progress in phonological skill development during the intervention.

Group-level results signify that good progress was made in the phonological skill areas measured between T1 and T2. Following the withdrawal of the programme at T3, results *generally* either plateaued or regressed slightly. Whilst the group was not able to improve upon the results gained in T2 following the programme withdrawal, scores indicated that despite some regression, they were mostly able to retain the skill levels reached. Analysis of individual profiles indicates however, that there is a wide variation in scores gained between individuals within the group. Whilst each individual child seemingly made progress in the development of their phonological skills, they did so at varying rates.

The phonological programme was seemingly viewed positively by each of the six children taking part with one enthused child stating *"I can read a bit now – look I can do all of these words!"*

Acknowledgements

Thank you to all the staff and children at the International School for their support, warmth and for making me love coming to work each and every day. I would especially like to say a big *thank you* to the children that were directly involved in this study for their enthusiasm, willingness and positive outlook towards all the activities.

I would like to thank Barbara Carlsen for her support and encouragement and for making it possible for me to complete this Masters study. I would also like to thank Nancy With and Brenda Stebbing for their inspiration, time and guidance throughout - I have learnt so much from you both. My thanks also to Lynell Chvala, Debra Cairns, Karina Sandved, Julie Lydall, Andrie Steen-Rulifson, Suzanne Erstad, Sue Danielsen, Susanne Norberg, Julie Stephens, Loretta Barratt, Peter Luitjens, and Cheryl Habesland for all the time spent either proof reading chapters, listening to my ideas, answering my many questions - and for always making a point of asking me how things were going!

I am eternally grateful to all the staff at the Institute of Special Needs Education, University of Oslo. Special thanks to Denese Brittain, Miriam Skjørten, Einar Sletmo, Berit H Johnsen, Liv Randi Opdal and Liv Lassen for all that they have opened my eyes to and for sharing their enthusiasm, commitment and knowledge. Thanks also to my classmates especially my study group, Margaret, Emad, Rosert, Lewoyhu and Dawit – you were definitely my 'Rays of Sunshine' I learnt so much from you all. I am also forever grateful to my thesis supervisor Rolf Fasting, without whom, this study would not have been possible. Thank you for your time, guidance and belief; your feedback and comments challenged me and I know I am the richer for it. Finally, thank you to all my friends and family, especially mum, dad, sis and my godmother for your unconditional love, support and guidance – it means the world to me. Pål, thank you for your love, encouragement and understanding and for putting up with me! – I love you.

Dedication

This thesis is dedicated to:

Orlando Hearn

(7th April 1980 – 17th December 2006)

Just by being you, you showed me how to look for the good in everything and everyone - and I will always be thankful to you for that.

I still can't quite believe that you are not here. So many people miss you and your ways – you were one of the best teachers this world could have hoped for, and my tears remind me of how lucky I am to have known you.

Besito de despedida - Hasta luego mi amigo x x

…and to all those children who have ever struggled to learn to read or write, or perhaps have never been given the chance to.

- This is for you.

Contents

1. Chapter One: Introduction

The culturally and linguistically diverse classroom is becoming even more prevalent in our world today, with many factors contributing to children entering into a school environment in which the teaching may not be conducted in their mother tongue (L1). An unfamiliar cultural setting coupled with the need to learn a new language (L2) can be an unsettling period in a child's life (Eidse and Sichel, 2004) and one that, if not addressed, could negatively impact their social, cognitive, academic and language domains of development (Thomas and Collier, 1997; Hartas, 2005). This can place them at-risk of developing difficulties in basic skill acquisition, in this case learning to read.

In 2005, the United Nations Population Fund (UNFPA) reported that approximately 191 million people, three per cent of the world's population, lived outside their country of origin. Families displaced, fleeing war, escaping poverty or crisis and possibly seeking political asylum in the hope of a better life elsewhere could form part of the reason behind this growing phenomenon. Moreover globalisation and increased global mobility stemming from the opening of borders may also be a contributing factor. Overseas job offers from multi-national companies operating across borders, often lead to families being placed abroad with the children entered into international schools, whose language of instruction and orthography often differ from that of their home country. It may also be the case in some countries previously under colonial rule that remnants of this colonisation are still present in their education systems. For example, many children may find themselves in schools where the language of instruction is that of the former colonial power and not their mother tongue. African nations such as Kenya and Uganda provide evidence of this, where English is used as the language of instruction in schools and often takes precedence over the mother tongue.

These factors do not form an exclusive list, but merely aim to reflect the fact that many of today's children may find themselves in unfamiliar territory both in

terms of language and culture. Not all children adapt to a new environment in the same way and not all will acquire a new language with ease. Some children may enjoy the learning process and will be adept in making links between their own language (L1) and the newly acquired one (L2) whilst others will find the transition much more difficult, taking longer to acquire the linguistic awareness skills that are so crucial to second language acquisition.

One linguistic skill central to both L1 and L2 language acquisition is phonological awareness. Gaining an awareness of the underlying sound /phonological system within a language refers to an ability to both listen to and process the speech sounds within it. In alphabetic language systems such as English, this involves developing sensitivity to the internal sound structures of words, such as syllables and more particularly, the individual phonemes (Treiman, 1985; Liberman & Shankweiler, 1991). Indeed before a child is able to map sounds to the corresponding orthographic representations and begin to read, they must firstly be able to become familiar with and identify those sounds accurately (Nation, K. & Hulme, C., 1997). Children who do not can be at-risk of reading failure.

1.1 Background

This study originated from my personal experiences of working with L2 beginner readers, who despite being in an English-speaking school system for at least two years, were displaying difficulties in developing their phonological skills. These children had remained at the *'beginner'* level of the on-going teacher-generated basic literacy assessments[1] and were deemed to be at-risk by their class teachers and the school's *Support for Learning* department.

[1] **Teacher-generated assessments** assess a child's mastery of a specified literacy skill area. For ***beginner readers*** the assessment criteria included: knowledge of sound-letter correspondences, ability to blend, and ability to decode simple CVC words.

Learning to read (and write) is one of the most fundamental skills a child can learn at school and perhaps one of the most complex. For young children with culturally and linguistically diverse backgrounds entering into an English-speaking school, the task of learning to read in a second language can prove particularly challenging. Almost every educational skill presupposes the use of language skills and research has shown that children most at-risk when it comes to reading failure are those who enter school with less verbal skill, less phonological awareness, less alphabetic knowledge and less familiarity with the basic purposes and mechanisms for reading (Dockerall and Lindsay,1998; Lyster, 2001). Cline and Shamsi (2000) inferred that English language learners (L2) entering into schools with limited English proficiency and who experience reading difficulties in the early stages, often do so because of linguistic and cultural obstacles which they are not always given sufficient help to negotiate. A cultural conflict between home and school, different learning approaches, and difficulty in acquiring the sound system of a language can all combine to create barriers to learning and consequently, learning to read.

Reading is very much a life skill and one which is crucial to a child's learning experience, development and chances of succeeding both academically and socially (Fasting & Lyster, 2005). The value of being able to read, lies not so much in a child's ability to perform the skill but more in what the child can gain access to through the skill (Adams, 1990). Fundamentally, reading can be a means to freedom, equality and empowerment. The ability to read provides access to information that helps to build knowledge, understanding and tolerance, enabling an individual to both process and engage in the world around them. In the age of information technology and in a world that increasingly communicates through written texts, reading and writing skills are seemingly vital to both finding one's place in society and to human development in its entirety.

1.2 The aim, rationale and significance of this study

Language and cognitive abilities underpin reading, with phonological awareness and orthographic knowledge being cited as the linguistic areas key to reading success.

The central aim of this study is to therefore explore whether additional training in phonological awareness given to at-risk L2 beginner readers would develop their phonological awareness skills and in turn, have a positive effect on their reading development. In addition, this study will explore the comments made by teachers regarding the children's progress in-class during the intervention. It will also observe the children's general response to the training programme. That is whether they seemed to enjoy it, were indifferent or responded negatively to it.

It is important to emphasise at this point that although developing a child's phonological awareness is linked to reading success, it is just *one* component that can impact upon learning to read. There are many others such as phonics instruction, fluency, vocabulary instruction and text reading comprehension skills (National Reading Panel report, 2000).

There is currently a vast body of research to support the phonology-reading link (Bradley & Bryant, 1983; Stanovich et al., 1986; Lundberg, Frost, & Petersen, 1988; Hatcher, Hulme and Ellis, 1994; Torgesen et al., 1994; Treiman, 2000). However most of the leading studies supporting this link have tended to investigate the phenomenon solely among English-*monolingual* children. A study conducted by Muter and Diethelm (2001) highlighted the need for future studies to investigate whether the phonology-reading link could also be extended to culturally and linguistically diverse populations whose first language (L1) was not English but who were nonetheless being educated in English. Moreover, with the growing occurrence of the culturally and linguistically diverse classroom the need is perhaps ever-present, especially if we are to continue to help L2 children at-risk of reading failure.

The significance of this study is two-fold. Firstly, reading problems or children at-risk of reading failure are common in classrooms everywhere, and given that reading underpins all areas of the curriculum, it is felt that this study could be of importance to many. Hallahan, Kaufman & Lloyd (1996) stress that reading failure in the early stages can have a damaging and lasting affect on a child's self-esteem and motivation to learn to read and write in the future. Ultimately, it can compromise a child's ability to access the curriculum. It is therefore essential that they are provided with appropriate help early on, to avoid the impact of these problems later.

Secondly, there is a general need for more research to be carried out regarding the phonology-reading connection among multilingual populations (Muter & Diethelm, 2001), including the way in which these children are assessed in their literacy abilities at the emergent stage and throughout their school life (see Chapter Two – Dynamic Assessment). Cline and Shamsi (2000) compiled a report for the Department of Education and Employment in England which focused on the assessment of literacy among L2 learners in England's schools. At the time of the report, L2 pupils constituted 7.5% of the school population. The report stated that;

> "*there is often a degree of confusion: a problem that arises solely because of a language difference may be treated as a more deep-seated learning difficulty; alternatively, a severe problem of learning may be ignored because it is assumed that the child will overcome it as fluency in English improves."* (Cline & Shamsi, 2000: 1)

This is an issue regarding the assessment of L2 learners and is a dilemma often faced by schools with multi-lingual, multi-cultural populations. Although this study does not focus on critiquing different assessment procedures, the way in which at-risk L2 beginner readers will be assessed prior to, and throughout the phonological awareness training programme has been carefully considered.

1.3 Thesis structure

Chapter One: *Introduction;* attempted to outline the purpose behind conducting this study.

Chapter Two: *Literature review and theoretical framework;* will introduce the concepts central to this study and present elements of previous research studies and theories that have helped to form this thesis.

Chapter Three: *Methodology;* will present the research method chosen for this study, along with the design, sampling procedures, a description of the intervention programme and the assessment tools.

Chapter Four: *Data analysis and results;* will present and analyse the findings.

Chapter Five: *Discussion and conclusion;* will consider the research findings in relation to the literature and theoretical framework presented in Chapter two, whilst offering conclusions and recommendation for areas of further study.

2. Chapter Two: Literature Review and Theoretical Framework

2.1 Chapter Overview

The chapter will present the theories that have shaped this thesis study and will attempt to align these to some of the practical challenges faced by the L2 beginner reader in developing phonological awareness in English. A brief overview of L1 and L2 language acquisition will therefore serve as a backdrop to help in introducing some of these challenges. This chapter refers to *phonological awareness* as an 'umbrella term' for skills such as rhyming, syllable segmentation, blending, and individual phoneme identification and aims to show the way in which these skills may develop on a continuum. It will also draw attention to the way in which dynamic methods of assessment can be used to measure the phonological skills of the culturally and linguistically diverse child and continuously monitor their progress.

2.2 Language Acquisition

From birth (and even pre-birth in the utero) to the age of four or five, children will begin to acquire and develop the phonological system of their mother tongue (L1). A baby soon begins to understand that she can have an influence over her environment when simple utterances elicit desired responses. A child's means of communicating will develop from very basic pre-verbal gestures at birth to vocal gestures to single words, to multiple utterances and, by the age of around five, complete sentences (Clark and Clark, 1977). From the age of three to five, vocabulary will tend to increase dramatically as the human brain continues to look for systematic consistencies and repetitions within the sound system that it is exposed to. It is constantly processing and organising the sounds and acoustic features that are frequently repeated and begins to flag these as important. The more often these

sounds are heard, the more quickly the brain will respond to and organize these, putting them into syllables, words, word combinations and ultimately sentences (Tallal, 2003). It is a process that usually needs no direct instruction as it happens in the child's first year. However, it is important to note that it is not an innate process in the sense that mother tongue language learning doesn't just occur inherently. There are many neurological factors at work that help us to make sense of the mass of sound/speech, visual and sensory stimuli that we hear, see and feel as we engage with the world around us (ibid).

Once children learn to talk, they will usually do so without consciously paying too much attention to the sounds within the words they are speaking. However, in order to acquire the skills to use the orthographic system of a language, the explicit instruction of the sounds within words, is usually required. An awareness of the phonemic structure and written form of words does not naturally occur as a child gains maturity and experience with the spoken language. Rather it must be consciously understood, with children being carefully guided and instructed to make the connection between oral language and print, in order to map phoneme segments to their corresponding orthographic representations /letters. The ability to understand, reflect and make connections between the spoken and written word can be attributed to a child's cognitive system. As children begin to read, they will need to apply the phonological aspects of language that they have acquired since birth, to the written form.

2.2.1 L2 Language acquisition

Second language acquisition relies on the same linguistic and cognitive processes outlined in acquiring L1, though the length of time for acquisition may vary from child to child. There are two main categories of second language acquisition; *Simultaneous* and *Sequential*. *Simultaneous* acquisition occurs when a child is exposed to two languages concurrently from birth. *Sequential* acquisition refers to a child learning a second language during infancy/adolescence (Roseberry-

Mckibbin 2003). For example, a child may begin to learn English as a second language when they enter into an English-speaking school, from the age of four or five. It is important to note here that Cummins (1981) stresses that when learning a second language sequentially, the mother tongue (L1) should not be neglected in favour of the language of instruction. Rather it should be nurtured alongside the instructional language used in school, to support L2 language development and to ensure that there is minimal *language loss* of L1. (Roseberry-Mckibbin 2003; Coltrane, 2003). During the early stages of learning a second language sequentially, it may often be the case that there is a *silent period* in which the child does very little speaking. It is a period in which a child concentrates all their efforts in comprehending, becoming receptive to or familiar with, the new language and its sound system. He/she may not attempt to speak until they have had time to feel comfortable and confident enough to do so (Cummins, 1981). Research has shown that the younger the child, the longer the silent -period usually lasts and it can be anything from a few days to several months. (Brice 2002 in Roseberry-Mckibbin 2003; Krashen 1982).

Coltrane (2003) stated that for children younger than five, a major challenge in learning a second language lies in the fact that many aspects of their first language have not had the chance to fully develop. Where older learners usually have the foundation of a fully developed first language when beginning to acquire a new one; younger English language learners (ELL) are working towards two milestones at the same time. That is, the full development of their mother-tongue, as well as the acquisition of English. Roseberry-Mckibbin (2003) highlights the importance of L2 beginner readers being given time to become accustomed to the English sound system. She infers that when given time, what a child can initially perceive to be a 'constant flow of speech' in the beginning stages of language acquisition, will soon start to become recognizable words. Subsequently, an awareness of the phonemes that make up these words can begin to be taught, as familiarity with new sound structure occurs. It will then be possible to begin 'cracking the linguistic code'.

2.3 Language and Reading

Bernstein and Tiegerman (1993:5) define language as a *"socially shared code, or conventional system that represents ideas through the use of arbitrary symbols and rules that govern combinations of these symbols".* As language develops, children will begin to systematically learn how to manipulate the combinations of symbols and grammatical rules, for a variety of communicative purposes. It is through language that children, analyse, communicate, organise and present knowledge to the outside world and ultimately, learn (Hartas, 2005). Language underpins reading and is the most important instrument for forming concepts. *"It is the tool that the individual uses when she handles her surroundings, in order to be able to take the world to herself, to grasp it, to comprehend it"* (Skutnabb-Kangas 1981; in Datta, 2000:24). The relationship between language and reading can be viewed as an interdependent one, even at its earliest stages. A language-rich environment will support reading development and a proficiency in reading will, in turn, support language development.

Kamhi and Catts (1989) highlight the fact that reading involves both spoken and written language and is essentially a complex system of deriving meaning from print. A child's linguistic skill comprises of an understanding of sounds, words, sentences, meaning and use of language. The goal of reading instruction is to offer children the opportunity to enter into a dialogue with the writer/author. During the process of reading children actively integrate linguistic skills, social knowledge and their earlier experiences in order to derive meaning from a text (Adams, Treiman and Pressley, 1998). They attempt to do this by skilfully integrating linguistic *meaning* and *form* verbally and visually (Bloom and Lahey, 1978)[2]. Integrating the meaning and form of language is a complex task, and in order to achieve this, children must draw on their meta-linguistic abilities.

---

[2] Appendix A; Bloom and Lahey (1978) Model of Language

2.3.1 Meta-linguistics

Meta-linguistics refers to the capacity to think about and talk about language holistically, using a range of linguistic skills. These linguistic skills include recognising the sound features of language (*phonological awareness*), understanding semantics (*word meanings*), possessing a good syntactical knowledge and displaying an awareness of the social and cultural context of a text. Hartas (2005) makes a link between the importance of children gaining a phonological understanding of the spoken and written language alongside the semantic, syntactic and social/cultural context within which the text located. Conversations that spring from a text can offer at-risk L2 children, a chance to express their thoughts as well as listen to the thoughts of their peers, helping to clarify their own understanding - a form of self-monitoring. Holdaway (1982) advocated this method in teaching beginner readers and called it the *'Shared book experience'*. He went on to suggest that after reading a text during story time, the same text could be used as an opportunity for teachers to engage children in phonological language play.

2.4 Teaching beginner readers: the debate

It is worth noting at this point, that there has been much debate regarding the right way to teach children to read and spell. The argument has mostly centred on the skill-based approach versus the whole language or meaning-emphasis approach. The two very different (yet not mutually exclusive) approaches have resulted in what has been deemed 'The Reading Wars' (Stanovich, 2000). A skill-based approach favours the explicit instruction of phonics (mapping sound-letters) and the systematic training of skills such as phonemic awareness, sound blending and decoding. In contrast, a whole-language or meaning-emphasis approach to reading prefers to focus on less structured training in phonics, and instead emphasises the *purpose* of reading. It encourages children to discuss and reflect upon stories, provides time each day for shared reading and encourages children to invent spelling for words they do not know.

Seemingly if beginner readers can 'read' the words but do not understand what they are reading, then they are not really reading – they are simply decoding. And to be able to comprehend and gain meaning from a text is surely the reason for reading. Similarly if they are not equipped with the skills to decode new words that they are faced with then meaning cannot be gained. Reading is therefore both decoding and comprehension (Adler, 2003) and the two approaches that have caused so much debate seem to have a complementary role to play in the effective teaching of reading. The 'balanced approach' (Westwood, 2003) to reading instruction acknowledges the importance of both skill-based and whole-language/meaning emphasis methods. The training study of Hatcher, Hulme and Ellis (1994) provides evidence to support such collaboration. Their study, comprising of 128 children aged six to seven years old experiencing reading difficulties, indicated that reading and spelling instruction was most efficient when phonology was taught alongside reading, rather than instruction in *'phonology alone'* or *'reading alone'*. It is possible that the *'balanced approach'* to learning to read echoes elements of the *Dual-route model of reading development* developed by Coltheart (1978) which helps to explain the process of learning to read.

2.4.1 Dual-route model of reading development

The model is founded on the assumption that the words we 'hear' when we begin to learn a language, are stored in a mental lexicon. It suggests that there are two ways to make the link between the semantics/meaning of the words in our lexicons and the printed words we 'see'. It acknowledges that a word can be read either by *decoding* or by *sight*[3]. The process of decoding, involves phonologically breaking down the form of the word in order to reach meaning. Decoding means to generate the pronunciation of a letter string (whether it's a word or non-word) using a set of sub-lexical spelling-sound correspondence rules. It transforms the graphemes

[3] Appendix B) The Dual Route Model of Reading Development; Coltheart (1978)

of the written word, letter by letter, into their corresponding sounds (phonemes) and it consequently identifies the word that the sounds have combined to make. This route to the lexicon is referred to as the *indirect* route/non-lexical route and seems to support the need for skill-based approaches to the teaching of reading.

In contrast, the *direct* route/lexical route to reaching the meaning of words, relates to the visual recognition or the orthographic representation of the word as a whole unit. The process relies on recognising what the word 'looks like' and is then linked directly to its meaning, thus by-passing any phonological analysis. If a word is known visually to a reader, then the process of sight-word reading quickly generates the correct pronunciation and semantic identity. The meaning-emphasis, whole language approaches to reading, that prefer not to place the focus on explicit decoding activities, can perhaps be likened to the *direct route* in Coltheart's model.

In practice beginner readers will need to use both routes. The direct route will help a child to recognise word patterns and morphemes (plurals, verb endings) which in turn may help develop fluency when reading aloud. This is because the process of recognising words by sight is quicker. However the indirect route will help a child to phonologically decode and spell words that they may have never come across before and in doing so, can help to build the orthographic lexicon for future use.

2.5 The importance of phonological awareness

Children's success in the beginning stages of reading is strongly linked to their level of phonological awareness (Stanovich, 1986; Goswami & Bryant, 1990; Adams, 1990; Liberman and Shankweiler, 1991; Torgesen et al., 1994). A child's phonological system develops as they gradually become accustomed to, and increasingly aware of the sound features within their language. For L2 children learning English as a second language, becoming familiar with a new sound system can take time. **Phonological Awareness** refers to the ability to reflect explicitly on the sound structure of the *spoken* word (Hatcher, Hulme and Ellis, 1994). Becoming

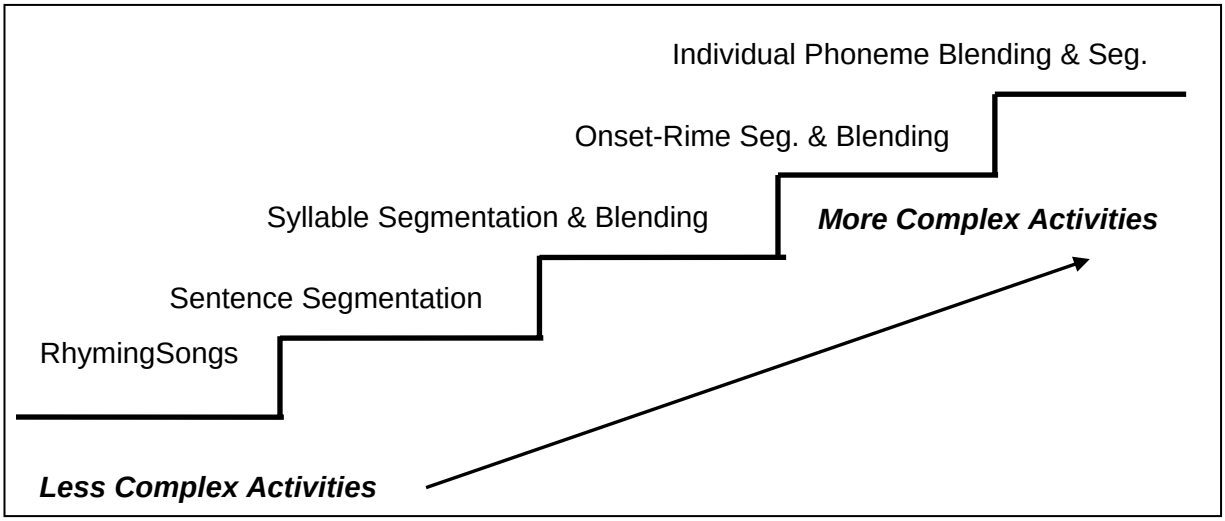
phonologically aware prepares children for later reading instruction, including instruction in phonics, word analysis, and spelling (Adams, Foorman, Lundberg, Beeler, 1998). The term phonological awareness should not be confused with a child's knowledge of **Phonics -** though the two concepts become entwined when a child begins to read and decode words. Phonics refers to a child's ability to map the sound structures they hear in speech, to the *written letters* they see printed, in order to read and spell words. Phonological awareness refers *exclusively* to the sounds within language. Essentially, a good level of phonological awareness requires a child to understand that language utterances are comprised of individual words and that these words are made up of one or more syllables and that the syllables are made up of even smaller units of sound – phonemes.

Typically, at the beginning stages of language acquisition, L2 children are faced with a 'wall of sound' or what seems to be a continuous flow of speech. Understanding that individual words exist within the wall of sound and are separated by pauses may not be immediately obvious (McGuinness, 1998). If a child does not understand that a word exists as a *unit* of speech, then it seems somewhat premature to attempt to begin discussing the sounds 'within the word' or to jump straight into teaching the sound-letter correspondences.

2.5.1 A model of phonological awareness

Chard and Dickson (1999) suggest that phonological awareness takes place on a 'Continuum of complexity', beginning with an appreciation of alliteration and rhyming.

Figure 2.5.1 Chard and Dickson (1999)



Robertson and Salter (1995:6) also state that phonological awareness skills *"follow a fairly consistent sequence"*. At the beginning stage, the focus is primarily on helping children 'hear', appreciate and become familiar with the rhyming and alliterative nature of selected words. They will try to recognise the similarities between word patterns **(rhyming)** and the similar sounds that come at the beginning of the words **(alliteration).** Recognising these similarities will eventually help them to interconnect and appreciate the sounds within words. Goswami and Bryant's (1990) study of the rhyming abilities of six-eight year olds showed that rhyming skills can help children to detect the onset-rime boundaries of words. For example awareness that /cat/ can be segmented into /c/-/at/ can in turn help to segment /mat/ into /m/-/at/ and /sat/ into /s/-/at/. Children who are able to categorize rhyming words in this way may also be quick to realize that the different groups of categories also share the same spelling patterns (Lyster, 1995). They may also be more attuned to the fact that /fun/ rhymes with /bun/ and at the more complex level, that the spoken words /fat/ and /fun/ begin with the same phoneme (Shankweiler and Fowler, 2004).

Much has been written about the correlation between early rhyming skills present in nursery rhymes/songs and the development of reading and spelling. There is evidence to support the premise that nursery rhymes and songs can enhance children's phonological sensitivity and this in turn may help them as they begin to learn to read (Bryant, Bradley, Macleon and Crossland, 1989; Goswami and Bryant,

1990). Lyster (2001) emphasises the importance of parents reading to children at home as a way of supporting phonological awareness. However it may be the case that in some cultures with high levels of illiteracy and a deficit in books and resources that these pre-literacy interactions may not be so prevalent. Likewise, cultures that may have an abundance of resources but allow children to form a 'relationship' with the television or engage in video games may also be at risk of losing the valuable pre-literacy exchanges (Lyster 2001, Palmer 2006). Palmer (2006) alludes to the gradual loss of the nursery rhyme in some cultures and societies, as a result of what she refers to as a 'toxic-childhood' and discusses the implications of this on a child's emergent literacy skills.

The next stage of the continuum model relates to an increased awareness of the way in which sentences are comprised of words. At the emergent stages of learning to read, asking a child to 'look at the first word in a sentence', can mean very little to them if they are unsure about what a **word** is. An understanding of the word concept is crucial if a child is to then develop their awareness of the internal structures of words – such as syllables. A **syllable** is the smallest unit of sound that contains a vowel sound. Recognising that words are divided into different units of sound and these sounds occur in a particular sequence (beginning sound + ending sound) is the onset-rime segmentation and blending stage of the continuum model. Sounds that occur at the beginning of a word before a vowel are known as **onsets** and sounds that occur at the end of the words and include a vowel are **rimes**. For example the word *green* has an onset *(gr-)* and a rime *(-een).*

Chard and Dickson's model shows an increase in complexity of activities as a child becomes more aware of smaller units of sound within words. According to the continuum, the most complex stage lies with a child's ability to identify and manipulate the smallest unit of sound within a word - the **phoneme**. Breaking a word down into its separate phonemes (segmenting) and then putting phonemes together to pronounce a word (blending) appear to be the best predictors of future reading success (Shankweiler and Fowler, 2004; National Reading Panel, 2001) .

2.5.2 Phonemic awareness

The phoneme is the most critical segment of phonological awareness. It is central to understanding the alphabetic principle that underpins our writing system. Although an awareness of phonemes has nothing directly to do with print, it is the vital pre-requisite to learning phonics and spelling. Blachman (in Kamhi and Catts, 1991) stated that understanding the complex relationship among the phonemes in the speech stream, has helped to shed light on the difficulties encountered by some beginner readers in segmenting phonemes. Blachman (1991) explains that when we pronounce a word such as *bag* we are actually transmitting information about each phoneme segment simultaneously (co-articulating) and it therefore comes out as one unit or one syllable sound. This is in contrast to when we write the word *bag.* Here, each letter is produced in isolation in a fixed sequence /b/-/a/-/g/. In order to understand why the written representation of the word *bag* has three segments, the beginner reader must become aware of the three segments in the *spoken* utterance.

Phonemic awareness is a metalinguistic skill that is built on the understanding that single-syllable words such as *bag* and *cat* can be segmented into beginning, middle, and ending sounds */c/ /a/ /t/*. It also involves an understanding that individual segments of sound at the phonemic level can be combined and also manipulated by adding/deleting and rearranging sounds to form new words.

In order for L2 beginner readers to successfully demonstrate knowledge of phonemic awareness in English, they must understand functional vocabulary such as */before, beginning, first/*, */middle, in between/* and */end, ending, last/*. They will then also be faced with the challenge of learning the irregularities of the English alphabetic orthography. Often the written script of English does not fully represent the phonemic structure of the spoken language. Although there are 26 letters in the English language, there are over 40 different phonemes. Sometimes one phoneme is represented by more than one letter. The word "*ship"* for example has four letters but three phonemes */sh/ /i/ /p/.* As an alphabetic orthography, English often displays a 'poor fit' between spelling and sound, especially when compared to the more

'transparent' alphabetic orthographies such as Finnish and Spanish which both demonstrate very consistent sound-letter correspondence (Aro, 2004). Indeed, the challenge in learning to read and spell is compounded by the fact that the 40+ phonemes in the English language are represented by over 250 different spellings. For example the phoneme /f/ can be spelt using *ph, f, gh, ff*.

Identifying individual sounds within words and subsequently identifying the words that the sounds combine to make, is dependent on what is referred to as a child's *phonological processing* abilities. Phonological awareness is a sub-skill of phonological processing.

2.6 Phonological Processing

Research suggests that one of the biggest barriers to learning early word reading skills is the inability to process language phonologically (Catts, 1991; Adams, 1990; Liberman, Shankweiler, & Liberman, 1989; Stanovich, 1988). Since English uses a sound-based representational system, phonological processing requires the beginner reader to learn to decode printed letters and store their associated sounds in short-term memory. They are then expected to blend these temporarily stored sounds to form words. Wagner & Torgesen (1998, 1987) highlighted three different phonological processes involved in reading and spelling: *phonological awareness*, *phonological memory*, and efficiency of *phonological access to lexical storage*, also referred to as *rapid automatic naming (RAN).*

Phonological awareness, (the central focus of this study) enables individuals to break words into syllables and component phonemes, to create words from separate sounds, and to learn about the distinctive features of words.

Phonological memory, or phonological short-term memory (a component of working memory), involves storing distinct phonological features for short periods of time to be "read off" in the process of applying the alphabetic principle to word identification. The short-term memory store holds information in a verbal form.

However it has a limited capacity and if too many items enter the short term store, the old ones may get ejected in order to make room. The more skilled a child is at holding a sound-letter match in their memory, whilst decoding, then the more cognitive resources he/she has for decoding and comprehension.

Phonological Access to lexical storage (RAN) refers to the efficiency of *retrieving* phonological codes from long-term memory. The faster and more efficiently a child can call-up phonological sound codes associated with letters, word segments and whole words from memory, the easier it will be to decode and to develop fluency. Tasks commonly used to assess phonological recoding for lexical access involve deciding whether a string of letters represents a real word or a non-word, and the rapid naming of objects, digits and other kinds of stimuli (Wagner, Torgesen, & Rashotte, 1999). Lexical access has been referred to as accessing the *meaning* of a word.

The phonological processing abilities of a beginner reader are closely linked to their emergent literacy skills and experiences. Emergent literacy consists of three primary domains (Phillips, 2007), each of which combines to form the basic building blocks for learning to read and write. *Phonological processing* is one of the domains and is sandwiched between a child's experience of *oral language* and *print knowledge*. Emergent skills begin developing in early infancy and early childhood, through participation with parents and teachers in meaningful activities involving talking and print.

2.7 Emergent literacy and cultural diversity

The term *emergent literacy* is used to describe the knowledge, skills and attitudes during the pre-reading stage of a child's development; the stage before they become an independent reader. Sulzby (1991:273) defines it as, *"the reading and writing behaviours of young children that precede and develop into conventional literacy"*. The emergent literacy stage can occur at a very young age and is

dependent largely on a child's home literacy experiences and interactions. A family environment in which a child is read to, and where they might observe older siblings using print materials or engaging in writing, can often motivate a young child to engage in similar activities such as 'pretend' reading and experimenting with writing (Westwood, 2003; Rogoff, 2003). An early exposure to books and being read to, may also provide opportunities for a child to make the connection that books are synonymous with stories and pictures, and that the print on the page conveys meaning to those who can 'read' and that 'readers' can turn this print into spoken language (Ibid). In cultures and environments where books may not be as prevalent and where the traditional values of oral story-telling are upheld, a child's own story-telling abilities can be greatly developed along with their abilities to recognise that a story has a beginning, middle and end, is made up of characters and that the events in story occur in times and places. Helping a child form awareness of stories and books can support their emergent literacy development. This, along with drawing a child's attention towards *written* print in a book or print in their daily environment (environmental print such as street signs, logos), as well as engaging them in the *spoken* aspects of literacy such as sounds and rhyme (nursery rhymes) can all combine to encourage and motivate them to want to learn to read (Chomsky,1972; Chall, Jacobs and Baldwin,1990; Lyster, 1998). Hartas (2005) stresses the importance of embracing cultural differences and acknowledging the way in which emergent literacy skills develop within these. For example, in some cultures to only 'speak when spoken to' may be the norm and children may find it difficult at first to engage in classroom discourse unless specifically spoken to. Certain cultures may have a strong oral tradition, with children more involved in storytelling than reading or writing tasks. Others may focus specifically on encouraging children to ask questions, share and discuss books with parents or teachers and experiment or play with writing. For example, the *Scaffolding theory* (Bruner 1987) suggests that teachers can 'scaffold' a pupil by talking about the text, asking and reformulating questions that *prompt* children's thoughts and ideas about ***what is happening, what may happen next*** whilst also introducing new vocabulary to enhance reading comprehension and facilitate pupils' understanding.

In addition, studies by Lyster (1998) and Chall, Jacobs and Baldwin (1990) have explored the impact of a child's home literacy environment and the positive relationship between higher levels of parental literacy (particularly the mother's) and a child's literacy, language and reading development. Lyster (2001) emphasises the importance of parents reading to children at home and *elaborating on the text*, whilst making reference to the *child's own experiences* and *interrupting reading to ask questions*.

L2 children enter school with varying cognitive and linguistic abilities as well as a diverse range of cultural, social and home literacy experiences. This diversity can have implications for the assessment of their emergent skills.

2.8 Assessing phonological awareness

Assessing a child's phonological awareness abilities can indicate areas of difficulty in learning to read and write. The assessment of culturally and linguistically diverse children at-risk, is an area that is in need of further attention, particularly with regards to available assessment tools (Cline and Shamsi, 2000; Cummins, 2002; Roseberry-Mckibbin, 2003). Standardised reading tests may not capture the true capabilities of children from culturally and linguistically diverse backgrounds. There may often be a degree of cultural bias in assessment tools. 'Bias' is described by Wood (1991) as *"differentially valid for members of different groups"*. Bias can be found in the content of tests, the language used and the formal testing situation.

Research has indicated that an English language learner's *social* language or basic interpersonal communications skills (BICS), take approximately two-three years to develop to a native-like level under ideal conditions (Cummins, 2002; Roseberry-Mckibbin, 2003). Ideal conditions include support for L1 (mother tongue) alongside L2 instruction. However, even with ideal conditions it is inferred that understanding the *academic* language of L2, often relies on a child's cognitive-

academic language proficiency (CALP) which can take approximately five-seven years to develop to a native-like level (ibid).

Traditional methods of normative/standardized testing involve comparing an individual's performance with that of a large sample of children of the same age. Critics have argued that this assessment approach cannot fairly represent the true capabilities of L2 learners as their prior experiences are likely to be significantly different to those children on which the 'norms' are based (Cline and Shamsi, 2000). Most standardized tests are developed from a Western, literate middle-class framework (Roseberry-Mckibbin, 2003). Seemingly, the most significant criticism of standardised tests is that their results provide little in the way of diagnostic information to help plan future instruction in the classroom as they are retrospective, focusing only on the end product /'fruits'. Conversely, dynamic approaches to assessment aim to be prospective in that they more frequently assess the development of emerging skills and are more interested in the 'buds' and 'flowers'.

2.8.1 Dynamic Assessment

Borne from the distinction between Vygotsky's Zone of Actual Development (ZAD) and the Zone of Proximal Development (ZPD), dynamic assessment attempts to assess the way in which a child responds to different forms of training such as simple feedback, demonstration, or prompts or hints in the form of questions. It aims to see what the children can achieve by themselves (ZAD) and the level they can reach with adult/peer help (ZPD). The idea that lack of experience is not the same as lack of ability is central to Vygotsky's theory of *Zone of Proximal Development*.

The way in which dynamic assessment not only determines current level of functioning, but also the best means to facilitate further learning is supported by Laing and Kahmi (2003) in their research into alternative assessment of language and literacy in culturally and linguistically diverse populations. They cite the case study of Lidz and Pêna (1996) which investigated vocabulary learning in two bilingual pre-school children. They attempted to compare the ***Teach-test-retest*** method of dynamic

assessment, to a standardized measure in order to predict how well each child responded to training. Each child's responsiveness ratings during the teach-test-retest method of dynamic assessment, was compared to post-test scores on the standardized measure. Both children received two 20-minute teaching sessions that targeted naming objects and pictures. Prompts and cues were provided to the first child based on their responses to instruction and were recorded using a Likert scale[4] according to the level of responsiveness, examiner effort in training and ability to transfer to new contexts. The case study showed that standardized measures of vocabulary provided little information about the learning potential of a child, where as the dynamic assessment methods used with the first child increased their scores by two standard deviations.

Dynamic assessment is a measure of a student's ability to learn when provided with instruction. It does not only identify what the child already knows, but also focuses on 'how' the child learns. Vygotsky's (1978) Zone of Proximal Development theory placed emphasis on social learning and stressed the way in which communication and social interaction with peers aids future cognitive development. In contrast to Piaget's age-governed developmental stages which seemingly implies that development has an end goal, Vygotsky appears to view development more in terms of a continuing process unrestricted by age bands. He considers what a child already knows and what they have the potential to know with the mediation of teachers or indeed peers who have already mastered a particular skill.

There is general support of the view that the performance of children learning English as an Additional Language should be assessed over time in different situations (Cline & Shamsi 2000) using multiple assessment tools that are as free from cultural bias as possible.

---

[4] Likert scale: a type of psychometric response scale developed by Likert, R. (1932). "A Technique for the Measurement of Attitudes" Archives of Psychology 140, 55

2.8.2 Test-teach-retest: The phonological assessment battery

The phonological awareness test battery – PhAB ((Frederickson, Frith and Reason,1997) is an assessment tool built for children aged six to fourteen and is used to assess phonological skills such as rhyme, alliteration, naming speed, fluency and non-word reading. Its aim is to provide a profile that will support the future planning of teaching. There are many variations of assessment tools which assess a child's phonological competencies, however, the phonological assessment test battery explicitly attempts to remove cultural bias as far as possible. Two studies had been carried out by the research group behind its creation, investigating the applicability and validity of using PhAB with two special populations of particular theoretical interest and educational relevance: children who have *specific learning difficulties* such as Dyslexia and children for whom English is an additional language (L2), the latter being directly relevant to this investigation.

Often children that come from diverse cultural or linguistic backgrounds can be penalised by assessments that do not account for their varying experiences and knowledge. The PhAB test battery uses a baseline figure of at least two years full exposure to English before testing is applicable. It bases this figure on the research conducted by Cummins (1984) and later by Roseberry-Mickibbin (2003) and the premise that L2 children typically require five-seven years to develop fully, the cognitive academic proficiency (CALP) in a second language which is tapped by verbal IQ tests; whereas surface competencies, such as phonology, often referred to as basic interpersonal communication skills (BICS), may be developed within two years.

The rationale behind the development of the PhAB assessment tool is strongly linked with the correlational and longitudinal studies of Stanovich et al., (1984 and 1986) which connected phonological awareness skills with reading acquisition and other studies that advocated the links between pre-readers' phonological awareness and subsequent literacy development (Bradley and Bryant, 1983; Lundberg et al., 1980; Torgesen et al., 1994). In addition, the test battery acknowledges and supports

the view that phonological training is very much a skill-based approach to learning to read and is most effective when implemented as part of a comprehensive and holistic reading programme.

The activities created for the training programme were inspired by *The Phonological Awareness Book* written by Robertson and Salter (1995) and the *Phonological Awareness Test Battery* compiled by Frederickson, Reason and Frith (1997). The development of the activities within the programme also owe much to Adams' (1998) statement in her book *Beginning to Read* which highlighted the importance of considering the needs and motivations of the *individual* child when developing reading skill.

> *"While accepting that everybody wants to go someplace, we must also recognise that not everybody wants to go to the same place. The materials and activities used in developing reading skill are, thus, of critical importance. To be maximally effective they must consistently be selected with sensitivity to the needs and interests of the students with whom they will be used."* (Adams, 1998:5)

2.9 Hypothesis and research objective

This study has, therefore, chosen to focus on the effect of phonological awareness training on young L2 beginner readers and to build these skills, not in isolation, but within a context, meaningful to their individual learning needs and experiences. Its underlying objective is to provide a programme that the children will enjoy, find challenging and motivating and that consequently builds their self-esteem and interest in learning to read and write. *"Keeping up a child's curiosity about the written language and the motivation to read and write is a challenge for the school, a challenge it should be very aware of".* (Lyster 2001:400)

The study's hypothesis builds on previous research advocating the positive relationship between phonology and reading development among at-risk monolingual beginner readers (Muter & Diethelm 2001; Hatcher et al. 1994; Stanovich et al .1986)

and intends to investigate whether a similar relationship can be found among L2 beginner readers at-risk of reading failure. This study's hypothesis is built on the premise that the children taking part in the programme will show an improvement in their skills after phonological awareness training. The main objective of the study is therefore to investigate:

⇒ *If there is a positive change in a child's phonological skills following phonological awareness training.*

In addition, this study will explore some general comments made by children, parents and teachers in response to the intervention programme in order to gauge whether it was viewed as a positive or negative addition.

2.10 Chapter summary

Research has shown that a variety of linguistic and cognitive abilities impact upon the early stages of reading. Differences in cultural experience, especially with regards to a child's home literacy environment and their emergent literacy skills, can have a significant effect on their phonological awareness. The relationship between phonological awareness and letter knowledge has been a central focus of numerous studies into reading development, particularly among monolingual children. For culturally and linguistically diverse children entering into an English-speaking school, the unfamiliarity with the English sound system and orthography may lead to initial barriers in learning to read. Chard and Dickson's (1999) model showed the way in which phonological awareness can occur on a *continuum of complexity.* The way in which this concept has been central to the *design* of this study's intervention programme will be outlined in the next chapter. In addition, Vygotsky's (1978) theory of Zone of Proximal Development and the resulting *dynamic assessment* of culturally and linguistically diverse children have influenced both the methods of assessment, assessment tools and the way in which the intervention programme will be implemented.

3. Chapter three: Methodology

3.1 Introduction

This study grew from concerns raised by class teachers regarding a small group of L2 children aged six to seven, who did not seem to be demonstrating or developing the pre-literacy skills required for beginning reading. Most of the L2 children 'flagged' as at-risk had attended an English-speaking school system for two years or more and had acquired good basic interpersonal communication skills (BICS) in English. However, in-class they were continuing to struggle in their understanding of *form* – that is an understanding of the morphological make-up and structure of words, letter-sound correspondence, word/spelling patterns and simple sentence structure. It was felt that these children could benefit from a programme that would use the language skills that they have already acquired over the last two years or more, as a basis for *additional* instruction aimed at developing their phonological awareness skills in English.

In order to research whether any change occurs in a child's phonological awareness skills after phonological awareness instruction, it has been important to consider carefully the method and design of this study.

3.2 Purpose and methodological considerations

Educational research aims to develop new knowledge and understanding about teaching and learning with a view to impact future educational practice (Gall, Gall& Borg, 2003). The aim of this study is to investigate whether additional training in phonological awareness can help at-risk L2 beginner readers develop their phonological skills and subsequently support their future reading development.

Cohen, Manion & Morrison (2003), stated that there are a variety of methods that can be utilized for educational research and that the method selected and its

subsequent design should be governed by the aim and purpose of the research. This study investigates a cause-effect phenomenon that involves a 'researcher intervention'. I intend to measure whether there is any change in a child's phonological skills after phonological awareness training. I decided that a quantitative experimental design would best fit the research purpose. The major feature of quantitative experimental designs is that of the researcher introducing an intervention such as a new educational programme (phonological awareness intervention) and then observing how the research participants react to it (Gall, Gall and Borg, 2003).

3.2.1 Quantitative Method

As a quantitative research method, the *single-group time-series experiment* is well suited to research into behaviour modification in the contexts of classroom management, training of individuals with disabilities and *skill development* (ibid). This study focused on a child's phonological skill development.

A single-group or single-case experiment should not be confused with a case study approach to research (Robson, 2002). They each share the common feature of a focus on a single-case or group but differ greatly in their design and purpose. Single-group experimental designs are quantitative and their success relies on the researcher's ability to use several procedures to maintain experimental control such as; checks on the reliability of the researcher's observations of the research participant's behaviour, repeated observations of the behaviours targeted for change over time and a description of the intervention in sufficient detail to permit replication of the study. This contrasts a case study design which is heavily reliant on qualitative data, is carried out in a field-setting and typically explores a phenomenon in a broader context, possibly involving a much larger-scale programme (Gall, Gall and Borg, 2003).

The single-group experiment is also known as a *time-series* experiment (Campbell and Stanley, 1963) and the two terms together are characterised by a

single group of research participants all receiving the experimental treatment (intervention) and then being measured at periodic intervals (time-series), with the experimental treatment administered between two of these intervals. Any progress made by the children taking part in this study will be measured at a baseline-level prior to instruction (T1), and will be followed by a post-test measurement taken at the end of the intervention period (T2). The intervention will then be withdrawn (a natural withdrawal that coincides with the two week school holidays) and the children will receive a follow-up post-test on their return (T3).

It was felt that a single-case experiment with time-series measurements would be the most effective in operationalizing the research aim and theoretical framework, whilst also helping to safeguard validity and the *ethical* responsibilities of the study. One of the major advantages of the single-group experiment design is that it is less concerned with comparing a child's progress to that of other children (in a control group for example). Rather a comparison is made of the *individual's* performance over time; the control being found within the child itself. In terms of dynamic assessment, and a child's individual learning potential, the single-group time-series experimental design can be one of the most supportive. It fits well with Vygotsky's (1978) theory of zone of proximal development which advocates the concept that lack of experience does not equate to lack of ability. Laing and Kahmi (2003) echo this when referring to the *Test-teach-retest* methods of dynamic assessment, whereby, the repeated time-series measurements and observations would not only determine current levels of functioning but also indicate the best means to focus and facilitate further learning.

In reference to ethical responsibilities, Sikes (2003) in Opie (2006) suggests that a useful way to consider methodologies and procedures is to ask yourself how you would personally feel if you or your children or your friends were 'researched' by way of them. Ethics permeates all aspects of educational research. Therefore, from the outset of this study it was important that I considered the possible ethical dilemmas with regards to; research design, access to research population and gaining

permission, data collection and data dissemination involving the protection of my informants' identities.

3.3 Sample

3.3.1 Target population

The target population for this study is an English-speaking international primary school in Norway. Children attending the school come from all parts of the world and with them bring a rich variety of cultural and linguistic knowledge and experiences. At the time of this study L2 children account for approximately 55% of the total population of the primary school.

3.3.2 Purposeful sampling

I will use *purposeful sampling* to select a sample from the total population. Purposeful sampling is used when there is clear rationale or criteria for selecting the participants. Patton (1990) states that it is important to remember when selecting a sample, that it fits the purpose of the study, the available resources, the question being asked and limitations faced. In this study the sampling criteria consists of L2 beginner readers aged six to seven who have at least *two years* of English language instruction and have been highlighted as experiencing difficulties in literacy by teacher-generated assessments and in-class observations. The most recent teacher-generated basic-literacy assessments include a reading assessment carried out with each child individually. It uses two books taken from the *Oxford Reading Tree scheme*[5]. The children are assessed on their ability to meet the objective: *To read a range of common three to six letter words and simple sentences independently, using their phonic knowledge to help sound out words.* Following this, the children are

[5] A well established and popular structured reading scheme which is highly successful at teaching children to read. The stories are carefully written using simple natural sounding language that children can understand. www.oxfordreadingtree.com

categorised into either; beginner-level, developer-level or established-level, according to the criteria they are able to meet. Those children who remain at beginner-level (as compared to their previous school term assessments and ongoing in-class observations) are highlighted as being at-risk of falling behind in their reading development. The sampling criteria and procedure are highlighted in figures 3.3.3 and 3.3.4

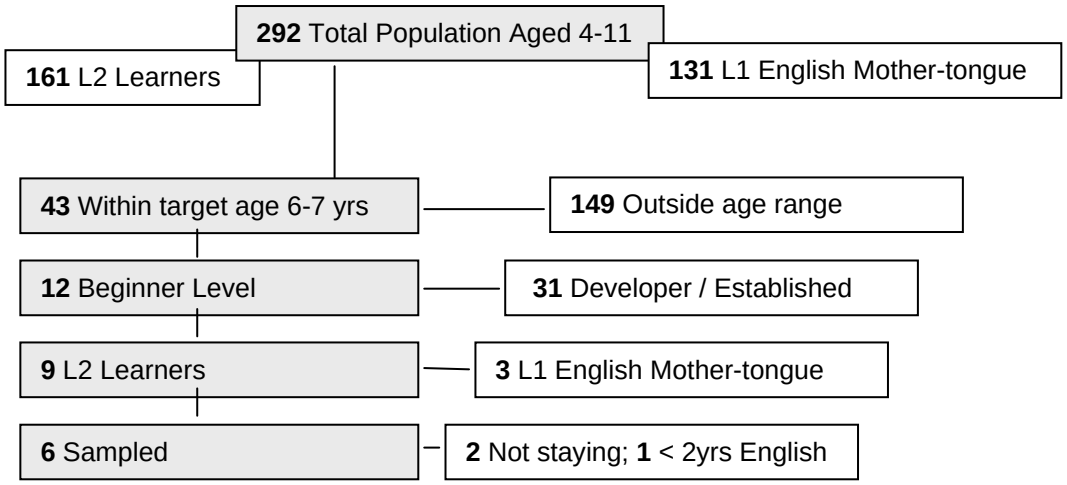
Figure 3.3.3 : Teacher-generated reading assessment criteria

LEVEL	***CRITERIA***	***Pupils aged 6-7***
Beginner level:	Can identify one or two letter sounds within the words.	12
Developer level:	Identifies most letter sounds, is able to blend words and read sentences with some help.	18
Established level:	Identifies all letter sounds, can blend words, reads fluently with expression	13

- *L2 beginner readers aged six to seven*
- *At least two years of English language acquisition*
- *'Beginner level', struggling in-class, and at-risk*
- *Will be in attendance for the duration of the 10-week intervention period*

Figure 3.3.4 aims to highlight how I reached my final sample and the criteria used. It begins with a total population of children in the primary school and shows the breakdown of those children who are learning English as a second language and those who have English as their mother tongue. From the total population, forty-three L1 and L2 children are in the age range of this study, with twelve struggling in literacy and remaining at the beginner. Nine of the twelve are L2 learners. The parents of two of the nine L2 children indicated that they would soon be leaving the school and one L2 child had less than two years of English language instruction. A final sample of six children was reached.

Figure 3.3.4 Diagram of the sampling procedure



By using an international school as an empiri, it is important to consider attrition rates as there is often a high turnover of students. Gall, Gall and Borg (2003) warned that in studies of school children it is possible that substantial numbers of them will leave during the school year. It is therefore necessary to check with the parents of the participants prior to the study that they are intending to stay for duration of the ten-week study period. The children taking part in the study (Figure 3.3.5) will become members of the intervention group, named as the *'phonological group'*.

Figure 3.3.5 : Displays the gender, country of origin and mother tongue spoken by the six children sampled

Phonological Group	*Country*	*Mother Tongue*	*Gender (M/F)*
Child A	Iran	Persian	F
Child B	Norway	Norwegian	F
Child C	Spain	Spanish	F
Child D	India	Punjabi	M
Child E	Botswana	Tswana	M
Child F	Sri Lanka	Tamil	M

The final sample consisted of three boys and three girls all aged between six and seven, each with a different mother-tongue and at least two or more years of English language acquisition. It may be of interest to note that the orthographies of the sample varied widely. For example the African script of Tswana has its roots in the Latin alphabet, whilst Persian is derived from the Arabic alphabet. It is also of

interest that the writing systems in South Asia often follow a Syllabic/Abugida writing method whereby a consonant is often accompanied by an inherent vowel[6] (Rogers, 2005). This contrasts European orthographies such as Norwegian and Spanish in which each letter of an Alphabet roughly represents an individual phoneme.

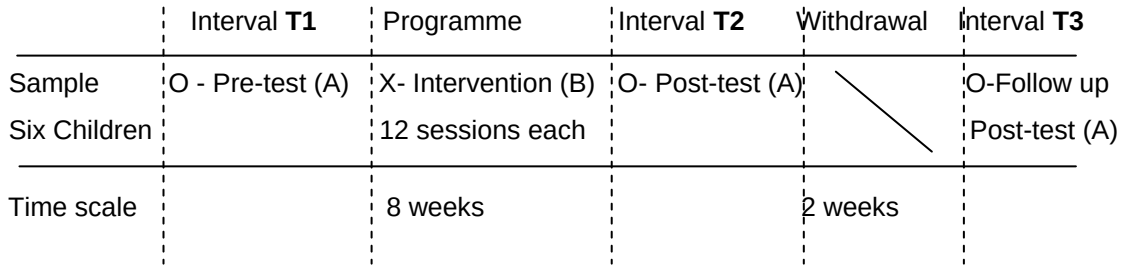
3.4 Design and Procedures

3.4.1 Design

I will use a single-case time-series *experimental* design to measure each L2 child's phonological skills prior to and after, receiving phonological awareness instruction. I have designed the study to run over a ten-week period, with the intervention programme taking place one to two times a week and lasting for eight consecutive weeks. The remaining two weeks of the study will see the intervention programme withdrawn. This was added to the design as a means to measure whether there is any change in a child's skill level following the withdrawal of additional instruction.

Figure 3.4.1 attempts to illustrate the study design and procedure.

Figure 3.4.1Study Design (A-B-A-A)



O – Observation; Phonological awareness test battery (PhAB, Frederickson, Frith and Reason, 1997)
X – Intervention; Phonological awareness intervention programme (Appendix D)

[6] A unique shape is used to represent each syllable sound /ka/ rather than the individual phonemes /k/ + /a/

The intervention programme will consist of 1x35 minute session a week as well as an additional 1x35 minute session *every other* week, targeting the aspects of phonological awareness which may prove to be consistently challenging. Over the course of the eight-week intervention period each child will receive twelve instructional sessions.

3.4.2 Intervention Procedures

In response to the concerns raised regarding the children in the *phonological group*, I discussed with the teachers, each child's areas of strength and weakness within their literacy lessons. In-class observations were discussed along with samples of literacy work and a copy of the school's teacher-generated basic literacy assessments over the last two school terms.

I pre-tested each child taking part in the phonological group using the *Phonological Awareness Test Battery* to gain a baseline measurement of their phonological awareness skills prior to instruction (T1). Any skill areas that the children showed a deficit in were subsequently highlighted on the record forms supplied with the test battery.

The content of the programme was structured around the premise that phonological awareness occurs in a fairly consistent sequence or continuum (Chard and Dickson, 1999) with the identification/segmentation/blending of individual phonemes being the most difficult skill to acquire. Therefore the beginning stages of the intervention programme (Weeks 1-4) were closely aligned to the skills of rhyming, alliteration and syllable segmentation/blending and the latter stages (Weeks 5-8) to onset-rime segmentation/blending and the decoding of individual phonemes. **Appendix D** provides a *week by week overview* of the content/activities included in the programme.

I planned and adjusted the activities in accordance with the needs of the individuals in the group. Although each child was flagged as 'at-risk', the areas in

which they showed greater phonological deficits varied. During the course of the intervention, the sessions that were held *every other* week were used to revise the phonological skills that the individual child was continuing to have difficulties in. For example some children found onset-rime blending activities particularly challenging whilst others found sound substitution activities to be more so. I also tried to ensure that each child experienced success whilst also being sufficiently challenged to move beyond their zone of actual development to their zone of proximal development.

The children had to be split into two groups of three due to their school timetabling commitments. Group 1 had their session at 9:15am-9:50am and Group 2 had their session 10.00am-10.35am every Thursday over the course of the eight weeks (from October 15th to December 15th). The 1x35 minute sessions were held every other week on Tuesday afternoons. Group 1 came in week 1 (and thereafter on all odd weeks) and Group 2 came in week 2 (and thereafter on all even weeks).

3.5 Instruments

3.5.1 PhAB test Battery

Vygotsky (1978) and Dixon-Krauss (1996) infer that the use of assessment tools and procedures that are dynamic, on-going and limited in their cultural biases will help to align instruction to the child's needs. This was the premise on which I based my selection of assessment tools and procedures. The phonological awareness test battery (PhAB) comprised different tests that assessed a child's phonological processing abilities. The areas within phonological processing include; phonological awareness, RAN, and phonological memory/fluency. The entire test battery took approximately 30-35 minutes to run with each child. The tests could be administered in any order, though it was recommended that the Alliteration test and the Rhyme test were not administered consecutively as during the pilot studies carried out by the test battery's creators, it was found that children had difficulty switching directly from

focusing on initial sounds to focusing on end sounds. It was also recommended that as the children given the PhAB were likely to be experiencing reading difficulties, the Non-Word Reading Test (the only test in the battery that involves reading, and the most complex test) should be administered as the last test. This was to help children avoid negative expectations which could have knocked their confidence and impacted performance on other tests.

I administered the tests in the order recommended by the test battery and kept this consistent throughout in order to improve reliability. The recommended order of the tests were as follows: Alliteration, Naming Speed Pictures, Naming Speed Digits, Rhyme, Spoonerisms, Fluency (Alliteration, Rhyme), Non-word Reading,

Phonological Awareness was measured by the sub-tests that were aligned to actual reading and spelling and were also the most likely to be influenced by phoneme-grapheme knowledge (Frederickson, Frith and Reason, 1997). These included: Alliteration test, Rhyme test, Spoonerisms test, and Non-word reading test.

The Alliteration Test; assesses children's ability to recognise and isolate the initial sounds in single syllable words. On each trial the child had to listen to three words and say which two of the three, started, with the same sound. The instructions include a script for the test administrator. Each child was given two or three examples to check that they understand what to do before beginning each task. For example *"I am going to say three words. Ready?-* ***shop, mat, shell.*** *Two of them start with the same sound. Listen again* (sustain the initial sound) – ***shshshop, mmmat, shshshell.*** *Which two start with the same sound?* During the test items the initial sounds are not stressed.

If the child experienced difficulties with this oral test, then a supplementary *Alliteration Test with Pictures,* in which pictures of the named objects was given and the child was allowed to respond by pointing.

*The Rhyme Test***;** assesses children's ability to identify the rhyme in single syllable words (e.g. the 'ate' in 'gate' and 'plate'). On each trial the child had to listen to

three words and say which two of the three, ended, with the same sound (e.g. *made,* hide, *fade).* An example of the way these options were presented included; *"I am going to say some words and I want you to tell me which two sound the same at the end. Listen –* ***sail, boot, nail****".* If the child responded with the correct answer during the practice items, feedback such as *"Yes,* ***sail*** *and* ***nail*** *sound the same at the end"* was permitted. If the child responded incorrectly then feedback such as *"Can you hear how* ***sail*** *and* ***nail*** *both end with an /ail/ sound, but* ***boot*** *has a different sound at the end? So the answer is sail and nail. They sound the same at the end",* was recommended. However during the test trials the only feedback permitted was general praise of the child's efforts with no reference to whether they are answering correctly or otherwise.

The Spoonerisms Test/ Sound Substitution Test; assesses whether children could segment single syllable words and then synthesize the segments to provide new words or word combinations. The children were asked to replace the first sound of a word with a new sound (e.g. 'cot' with a /g/ makes 'got'). The test was subject to a time limit of three minutes.

The Non-Word Reading Test; assesses the decoding of letter strings. When children read phonetically regular words, they may draw on their phonological processing skills and knowledge of letter-sound relationships to decode the word, and/or they may draw on their sight vocabulary to recognise the word and/or they may draw on their spoken vocabulary for clues to the word's identity. However, the last two strategies outlined, are based on visual processing and meaning, and cannot be used when reading non-words (Frederickson, Frith, Reason, 1997). This test tapped the phonological processing involved in reading non-words. There were two parts: the first consisted of 10 one-syllable items (e.g. tib) and the second of 10 two-syllable items (e.g. 'haplut').

Phonological production speed/oral fluency(RAN) measured the fast and automatic retrieval of phonological coding at the whole word level through the Naming Speed tests. *The Naming Speed Tests;* assess the speed of phonological

production, involving retrieval of phonological coding at the whole-word level. Two versions of the Naming Speed test were provided. *The Picture Naming Test* uses line drawings of five common objects: a table, a door, a ball, a hat and a box. *The Digit Naming Speed test* uses numbers 1 to 9. In each case the child was shown a visual display of randomly presented items and asked to name in sequence as quickly as they could whilst being timed. Two different trials were provided for each of these tests.

Phonological memory and fluency measured the way in which phonological codes based on alliteration and rhyme could be retrieved from memory. *The Fluency Tests;* assess the retrieval of phonological information from long-term memory. The child was asked to say as many words as possible relating to a particular topic in the space of 30 seconds. *Fluency Alliteration* involved saying as many words beginning with /m/ for example, and *Fluency Rhyme* focused on as many words that rhymed with 'bat' for example.

3.5.2 Field notes: Running log book

A *'Running log book'* was created for each individual child and used as an observation tool to keep qualitative notes on the child's achievements after each session over the eight weeks. It included a brief summary of what the child was able to do and what the child found particularly challenging. It also logged comments made by the children relating to the activities they were doing and contained notes on the skills needed to be worked on in the next session. The running log book was also used to record any informal comments or observations made by the class-teachers and assistant teachers with regards to the children's in-class literacy behaviours during the intervention.

3.6 Validity and Reliability considerations

3.6.1 Validity

Cohen *et al.*, (2003) state that the single-group experimental design involves the continuous assessment of some aspect of human behaviour over a period of time. In this case, the continuous assessment is of a child's phonological skills. It is these continuous assessment or time-series measures that can help to ensure validity and draw inferences about the effectiveness of the intervention. However the single-case time-series design has many threats to its internal validity. Internal validity is the extent to which the extraneous variables can be controlled (Gall, Gall and Borg, 2003). Extraneous variables can impact the outcome of the study's results and make it difficult to attribute observed changes directly to the intervention programme employed. They can be defined as those variables other than the treatment variable. For example, I was unable to control the in-class literacy instruction the children were receiving whilst the intervention programme took place. Therefore I am unable to directly or explicitly attribute any improvement in a child's phonological skills to the phonological awareness intervention programme itself. However, it is hoped that the time-series measurements taken over the duration of the intervention period can still help to ensure a good level of validity and allow inferences to be drawn regarding the effectiveness of the intervention.

3.6.2 Reliability

Wellington (2000) stated that reliability is a measure of consistency over time and is the extent to which a method or assessment tool can offer consistent results across a range of settings and maintain reliability even when used by a range of researchers. This study attempted to ensure the reliability of its results, through both its design and the methods used. For example, I was the only person administering the phonological awareness test battery and the children were given the same environmental conditions each time (a small, light room, with minimal distractions,

and the seating arrangement suggested by the PhAB assessment tool guidance material).

The single-case time-series design was used to measure the children's progress at three different (A) intervals (A-B-A-A) over a total time period of ten weeks. It was important to consider that an appropriate amount of time would need to be given between the administration of the pre-test and post-tests in order to increase reliability (Opie, 2006; Gall, Gall and Borg, 2003). If the time between testing was left too long, extraneous effects may distort data, such as the maturation of students. Likewise too short a time period between tests could mean that students might easily remember what they said or did in the first test situation and consequently they could become sensitized to the test.

It is important to bear in mind that tests always tap many different underlying abilities and are subject to many influences and a test score whether good or bad is only a pointer. The advantage of a time-series design is that many scores taken together and where possible the careful elimination of other influences can help to improve reliability (Frith, Frederickson & Reason, 1997).

3.7 Running Procedures

3.7.1 Piloting the PhAB

I piloted the PhAB test with two eight year old L2 children. Piloting the assessment tool provided the opportunity to become familiar with its structure, style and recommended guidelines. A pilot run also made it possible to arrange the testing environment to ensure that it was free from distractions and comfortable. A seating arrangement for the administration of the assessment was suggested in the test manual whereby it was recommended that the *record form* be kept discretely out of the child's view as the stimulus words for many of the tests were written on it. Other guidelines included suggestions for establishing and maintaining rapport prior to and throughout the testing situation by offering non-specific praise and encouragement.

The piloting of the assessment tool led to some small changes being made when it came to assessing my study participants. For example during the pilot the *spoonerisms test* (which was divided in two parts, the second of which was seemingly designed for much older students due to the level of difficulty) was omitted during the assessment of my sample. Likewise, the third part of the *non-word reading test* was only given to those children who were able to complete the majority of the prior section. This was to ensure that they remained challenged, yet successful.

Overall the children seemed to respond positively to the assessment and also liked the idea that during some tasks, they were *"racing against the clock"* as one child put it. They seemed to enjoy seeing how many words they could think of beginning with the sound /k/ in the space of 30 seconds for example. I think they viewed each task in the test battery as a new challenge. If they were clearly struggling with one of the tasks, I simply stopped, praised their effort and suggested *"we could try something new now"*.

3.8 Ethical considerations

"Ethics has to do with the application of moral principles to prevent harm or the wronging of others, to promote good, to be respectful and to be fair." (Seiber, 1993:14)

The intervals in a single-group time-series design are often referred to as A–B–A. The simplest format of a single-group research study is an A–B design, where the (A) phase is the baseline measurement taken prior to the intervention and the (B) phase is representative of the treatment/intervention programme. In an A–B–A design, a second baseline is added and this typically involves the *withdrawal* of the treatment in order to measure its effectiveness. However, from an ethical stand point, it would have been both negative and unfair to withhold a programme from children, especially if it is seen to be working. This study was therefore designed to take place over ten weeks and timed so that the *'withdrawal'* of the programme coincided with the school's winter holidays. The break or withdrawal of the programme for two

weeks was therefore a natural one. The children were post-tested before they went off on their winter holidays. A second post-test was taken on their return from the two-week winter break, in order to see if they had; retained, improved upon, or lost some of the skills they had been working on.

The study has an A-B-A-A design, which still poses an ethical challenge. Despite the fact that parents and children were informed that this programme would be ending after ten weeks, the A-B-A-A design still presents an ethical dilemma in the sense that it still ends with the withdrawal of a programme that may turn out to be helping the children. In terms of the research period, time constraints and other factors meant that it was not possible to turn the study into A-B-A-A-B design which would see the continuation of the programme. However, in order to ensure that the children were not suddenly denied the additional help that the programme offered, it was suggested that another member of staff at the school could continue with it after the study's end, if indeed it showed to be benefiting the children.

It should perhaps also be mentioned at this point, that a *control-group experimental design* was considered at the beginning stages of this thesis study. This design involves the random assignment of children into two groups, with one group receiving the intervention and the other used as a control group. Although this design would have been stronger in ensuring validity, I felt that withholding the intervention from a control group would be unethical from the very beginning. Even if the same intervention was offered after the official period of study had ended, it was considered that as the focus of the research was on children already identified as 'at-risk', that they should all be offered access to the intervention as soon as possible.

3.8.1 Norwegian Social-science Data services (NSD)

This study received approval from the Norwegian Social-science Data services (NSD). Approval was granted on the condition that all data collected was coded and contained in a secure place throughout. In addition, it was stated that upon publication of the thesis any information that could be linked to the participants'

identities needed to be anonynomised. It was also agreed that parental consent would be gained on two separate levels: i) Consent for the child to participate in the study and ii) consent to allow the results to be published at the study's end. **Appendix E** displays a copy of the letter and permission/reply slip sent out to parents.

3.9 Data collection and procedures

After I had gained parental consent, I registered and coded my sample group into an Excel spreadsheet. The children's names were replaced by a sequence of coded letters during the study, and these will be turned into 'Child A – Child F' when the final results are presented. I pre-tested each child, gathered the raw data and plotted the test scores on to the record form (T1) and then into Excel. In order to gain a visual representation of whether a child's level of skill fell into the highlighted PhAB areas (which suggested skill deficits), the raw scores had to be converted into standardised scores according to a child's age in years and months. The test battery indicated that a presence of three or more highlighted scores can usually be interpreted as indicating phonological difficulties. This data collection procedure was repeated during the post-test (T2) and the follow-up post-test (T3).

The test battery urged caution and emphasised the importance of considering the child's overall profile and other assessment information including qualitative data. For example, in-class observations, teacher comments and the running log documenting the learning opportunities and a child's responses to these. It is important to note here, that the analysis of results in *Chapter Four* will focus mostly on the raw scores rather than the standardised equivalents. This is because the purpose of this study is not principally concerned with comparing the individual child's results with a large or nationally representative sample. Rather it aims to gauge the child's *individual* performance over a specified time period.

The data collected will be entered into SPSS (Statistical Programme for Social Sciences). Although my sample size is small (N=6), *descriptive statistical analysis*

will be used to make inferences about possible trends. The analysis will take place at group-level and individual-level. Group-level descriptive statistics will be presented in tables and will begin by showing the Mean and Standard Deviation at the baseline (T1). Mean and Standard Deviation scores will then be given for (T2) and (T3). Any correlational trends between the sub-tests will be analysed using the *Pearson's correlation co-efficient (two-tailed)*. Although this type of analysis is usually better suited to a much larger sample, it will be employed only as an additional analysis to look for any beginning trends or patterns in the data. The alpha level will be set to 0.05. A *'t-test'* will then be carried out to assess any significant change in the children's skills after the intervention. Finally the individual growth scores will be displayed graphically over the three time-series intervals. Qualitative data such as the data recorded in the running log will be included in *Chapter Five: Discussion.*

3.10 Chapter Summary

The aim of this chapter was to outline the methods used to carry out this study. It has presented the choice of research design, programme structure and assessment tools against a backdrop of ethics, validity and reliability. It also outlined the sampling and data collection procedures and the way in which the data collected will be analysed.

4. Chapter Four: Data presentation and analysis

4.1 Chapter overview

This chapter will present the results of the intervention programme and its effects on the L2 at-risk beginner reader. The Phonological awareness test battery (PhAB) was used as a tool to measure the children's progress in the different skill areas at three different time-series intervals (Pre-test, Post-test, Follow-up post-test after the intervention had been withdrawn). The individual child's progress over T1, T2 and T3 will be displayed graphically. SPSS will be used to carry out group-level descriptive statistical analysis and to analyse whether any correlational trends could be found with regards to children's progress in certain skill areas.

The study's hypothesis was built on the idea that the children taking part in the intervention programme will show an improvement in their skills following training. Using a single-case experimental design, this study aims to explore:

> ⇒ *Whether additional training in phonological awareness given to at-risk L2 beginner readers would lead to a positive change in their phonological skills.*

In addition, the study will include qualitative findings outlining some of the responses and comments made by the children, parents and teachers during the intervention.

To summarise, my sample consisted of six L2 beginner readers, each with at least two years of English language instruction and each remaining at the 'beginner-level' of the teacher-generated basic literacy assessments and deemed to be at-risk. The chapter will begin with a group-level descriptive statistical analysis of my data to ascertain the means (M) and standard deviations (SD) of my sample. Due to my limited sample size (N=6), the majority of the statistical analysis will be descriptive. A brief *Pearson's* correlation analysis of the sub-tests will be included in order to detect any correlational trends. I will use the *t-test* to test the level of significance

between the pre-test T1 and the post-test T2, and later to analyse any differences in the post-test and follow-up post-test T3. The chapter will also include an analysis of the intervention effect at the individual-level with results displayed graphically. I will first give an outline of the descriptive statistical analysis at group level.

4.2 Descriptives statistics at group level

Table 4.2.1 displays the descriptive statistical analysis of the group's raw scores for all measures at T1, T2 and T3 together with the minimum and maximum scores achieved. In-line with Chapter three's description of the PhAB test battery (3.5.1), the sub-tests have been grouped under the particular skill area they measured.

4.2.1 Table displaying group-level descriptive statistics using raw data scores

	T1 *(Oct)*				***T2*** *(Dec)*				***T3*** *(Jan)*			
Test (Raw data)	*Min*	*Max*	***M***	***SD***	*Min*	*Max*	***M***	***SD***	*Min*	*Max*	***M***	***SD***
Phonological Awareness												
Alliteration [a]	*0*	*7*	***3.3***	***2.7***	*3*	*9*	***7.5***	***2.2***	*3*	*9*	***6.8***	***2.1***
Rhyme [b]	*2*	*9*	***6.3***	***2.5***	*6*	*17*	***11.8***	***4.1***	*6*	*18*	***10.8***	***4.2***
Spoonerisms [c] *(sound substitution)*	*0*	*4*	***2.3***	***1.5***	*4*	*9*	***6.5***	***2.4***	*3*	*9*	***6.0***	***2.6***
Non-word [d]	*0*	*5*	***2.3***	***1.8***	*2*	*13*	***10.0***	***4.3***	*3*	*13*	***10.0***	***3.8***
Phonological production (whole word level)												
Naming Speed Pics. in seconds	*134*	*237*	***175***	***43.2***	*91*	*207*	***143***	***44.9***	*99*	*217*	***161***	***55.1***
Naming Speed Digits in seconds	*111*	*283*	***173***	***67.3***	*69*	*216*	***128***	***67.7***	*75*	*250*	***135***	***72.2***
Phonological Memory& Fluency (onset-rime level)												
Fluency Alliteration	*4*	*11*	***6.6***	***2.7***	*5*	*11*	***8.3***	***2.6***	*4*	*10*	***7.0***	***2.0***
Fluency Rhyme	*0*	*9*	***3.1***	***3.5***	*3*	*12*	***6.8***	***3.0***	*4*	*9*	***6.1***	***1.8***

Note:

1. *All analysis is based on N=6*
2. *Non-word test has been grouped under phonological awareness. It is essentially measuring the grapheme-phoneme decoding skill.*

a The maximum score for the Alliteration test is 10
b The maximum score for the Rhyme test is 21
c The maximum score for the Spoonerisms test is 15
d The maximum score for the Non-word reading test is 20

In general, the children in the *phonological group* progressed well in each of the phonological awareness skill areas measured over the eight week intervention

period (12 sessions). Recognising the initial sound in words (Alliteration) and words that sounded the same at the end (Rhyme) seemed to be the easiest skills for the group to both acquire and retain. This is reflected in the improved scores achieved in the post-tests (T2) and the way in which these scores were sustained in the follow-up post-tests (T3). The maximum scores obtainable for these tests were 10 and 21 respectively. These results seem also to echo Chard and Dickson's continuum model (1999) which placed rhyming and initial sound recognition as one of less complex skills within the phonological awareness continuum. However, the skill of *blending* and *segmenting* onset-rime proved to be more challenging. Some of the most important phonological units for young children are onset and rime. That is to say, one of the major phonological skills a child can bring to reading and writing is the ability to divide a word into onset and its rime, and also to categorise words which have the same onset or the same rime. It is not always an easy task, though once mastered can help a child recognise word patterns and make connections.

The *Spoonerisms Test* in the battery (sound substitution section) includes the *synthesis* of onset-rime, a skill which appears much higher up on the continuum model. The improvement in the group mean from T1 (M=2.33) to T2 (M=6.5) is notable. Many activities in the intervention programme included phonological sound play whereby the children substituted initial, final and medial sounds in words. They seemed to enjoy tasks such as substituting the sounds in their own names and the names of friends, family and pets, for example.

The *Naming Speed Tests* measure the efficiency/automaticity of access to and retrieval from long-term memory of phonological coding at the whole-word level. The tests involved both visual and verbal processing. The children's skill in this area varied widely within the group. There is a considerable difference between the minimum and maximum scores gained by the individual children. The figures displayed in table 4.2.1 show the number of seconds it took each child to complete the naming speed picture task and the naming speed digit task. The minimum number of seconds taken in each of the tasks translates to approximately two minutes,

whereas the maximum is closer to four or five minutes. Two of the six children showed a very slow capacity for the retrieval of phonological information at both the whole-word level and the onset-rime level. A slow phonological processing speed is often evident in children who are at-risk of difficulties in learning to read. Individual profiles will be explored in the following chapter.

Like the Naming Speed tests, The *Fluency Tests* also tap the skill of retrieving information from long-term memory though this time the focus is on using phonological coding based on onsets and rimes. All the children seemed to perform well on the Fluency Alliteration tasks even at the pre-test stage. The results fluctuated slightly over the intervention period with one child's score notably not making any progress between T1 and T2 and then deteriorating from stage T2 to T3. The reasons for this are a little unclear. Individual aspects will be explored in greater depth further into the chapter, however, during the follow-up post test the running log notes recorded Child F becoming "visibly fatigued" towards the end of testing which may have adversely affected performance. The group-mean scores taken from the Fluency Rhyme test show an overall increase in the children's skills from T1 to T2, with the improved scores remaining at the follow-up test T3. Finally, the *Non-word test* drew on the children's metalinguistic skills and measured their ability to decode regular words when *no clues* were evident to hint at their meaning. The group-mean increase in this skill rose from M=2.33 at T1, to M=10.0 at T2 and displayed the most significant increase of all the sub-tests included in the phonological awareness test battery.

4.3 Correlations

Initially, I had expected to see correlations between several of the sub-tests, most notably between Alliteration and Fluency Alliteration; and Rhyme and Fluency Rhyme. Although the alliteration test tapped a different skill to the *fluency* alliteration test, there is some overlap with regards to a child grasping the concept of alliteration. I therefore expected those children who scored well on the Alliteration test and who had seemingly grasped the concept, to also score well on the Fluency

Alliteration test and likewise with the Rhyme tests. However, Tables 4.3.1 and 4.3.2 show how this wasn't always the case.

The Pearson correlation coefficient has been obtained to explore the relationship between different subtests. The two-tailed aspect of the test refers to the fact that any direction of *effects* (ie. higher or lower than the mean), are not specified in advance. Tables 4.3.1 and 4.3.2 below, outline the correlation coefficient for each of the sub-tests at the pre-test (T1) and post-test (T2) level Correlational trends have been flagged at .05%

4.3.1 Pre-test correlations (T1)

T1 Pre-test Correlations Pearson's 2-tailed

	Alliter	Rhyme	Spooner	Non_wd	NaSp_P	NaSp_D	Flu_All	Flu_Rhy
Alliter_	-	-0.16	0.16	-0.61	-0.07	0.39	-0.22	-0.42
Rhyme_		-	*0.94	*0.72	-0.38	*-0.74	0.02	0.10
Spooner_			-	0.52	-0.38	-0.59	-0.06	-0.05
Non_wd_				-	-0.10	-0.59	-0.28	0.68
NaSp_P_					-	*0.80	-0.54	0.28
NaSp_D						-	-0.47	0.05
Flu_All_							-	*-0.71
Flu_Rhy_								-

* Correlation is significant at the 0.05 level (2-tailed).

4.3.2 Post-test Correlations (T2)

T2 Post-test Correlations Pearson's two-tailed

	Alliter_	Rhyme_	Spooner_	Non_wd_	NaSp_P_	NaSp_D_	Flu_All_	Flu_Rhy_
Alliter_	-	*0.79	0.41	-0.18	-0.65	0.32	*0.73	0.56
Rhyme_		-	0.22	-0.06	-0.24	0.52	*0.80	0.48
Spooner_			-	0.65	-0.34	-0.18	0.43	-0.06
Non_wd_				-	0.09	-0.46	0.34	*-0.71
NaSp_P_					-	0.43	-0.48	-0.07
NaSp_D						-	0.42	*0.80
Flu_All_							-	-0.04
Flu_Rhy_								-

* Correlation is significant at the 0.05 level (2-tailed).

At both the pre-test and post-test stages this study found weak correlation between several of the subtests. However the results displayed in the post-test table 4.3.2 suggest that there may be some correlational trends between tests such as Alliteration and Rhyme (*0.79) the Alliteration and Fluency Alliteration (*0.73) and also with Rhyme and Fluency alliteration (*0.8). This contrasts the correlations outlined in the pre-test table 4.3.1. I suspect that the predominantly low correlations are due in most part to the small size of the sample and its diverse nature, particularly the fact that each child had a different mother tongue and orthography. For example the low scores recorded by three out of the six children (50% of the sample) on the Naming Speed/Fluency tests may have influenced any further correlational trends. Indeed, low correlational trends suggest high variation among the .individuals within the sample. Therefore individual differences will be explored in section 4.5.

4.4 Analysis of differences: repeated measures

The T-test is suited to smaller sample sizes and will be used to test the level of significance between the two sets of Means T2-T1 and T3-T2. The alpha level has been set to 0.05 to indicate any relationship trends between the dependent variable (the intervention programme) and the independent variable (the performance of the L2 child at-risk). The effect of the phonological intervention or its effect size is

tentatively defined by Cohen (1988) as "small, *d* = .2," "medium, *d* = .5," and "large, *d* = .8". Cohen (1988:25) states that *"there is a certain risk in inherent in offering conventional operational definitions for those terms for use in power analysis in as diverse a field of inquiry as behavioural science*".

4.4.1 Table displaying the T-test analysis of significant change between T2-T1 and T3-T2

	T2 – T1				T3 – T2			
Test	**df**	**F**	**Sig**.(p)	**Effect size**	**df**	**F**	**Sig**.(p)	**Effect size**
Phonological Awareness								
Alliteration	*1*	*18.06*	*.008*	*.783*	*1*	*4.00*	*.102*	-
Rhyme	*1*	*6.07*	*.057*	-	*1*	*2.50*	*.175*	-
Spoonerism/sound-sub	*1*	*48.07*	*.001*	*.906*	*1*	*5.00*	*.076*	-
Non-word	*1*	*25.43*	*.004*	*.836*	*1*	*2.00*	*.100*	-
Phonological Production								
Naming Speed Pictures	*1*	*8.31*	*.034*	*.624*	*1*	*5.50*	*.066*	-
Naming Speed Digits	*1*	*6.60*	*.050*	*.569*	*1*	*1.30*	*.306*	-
Phonological Memory								
Fluency Alliteration	*1*	*3.57*	*.117*	-	*1*	*3.07*	*.140*	-
Fluency Rhyme	*1*	*3.75*	*.110*	-	*1*	*.40*	*.555*	-

p=<0.05)

The *t-test analysis* suggests significant differences between T1 and T2 on several of the subtests inferring that the children improved upon their phonological skills after instruction (T2-T1). The effect size, in line with Cohen's (1988) definition, is mostly positive, with the scores for alliteration (.78), spoonerisms/sound substitution (.90) and non-word reading (.83) indicating a medium to large change in skills as an effect of the intervention. Following the withdrawal of the programme (T3-T2) the children generally do not show any further improvement upon their skills, however, the *analysis of individual progress* will show how, in some instances, the children were able to maintain the skill levels reached at T2.

4.5 Analysis of individual progress throughout the study

The descriptive statistics outlined in 4.2.1 showed the progress made at the group-level. The M-values improved for each of the skill areas after the phonological intervention programme and at T3, following programme withdrawal, the M-values decreased slightly for all tests. However, the SD measures have so far not been addressed. The varying scores of the individual children are reflected in the SD; that

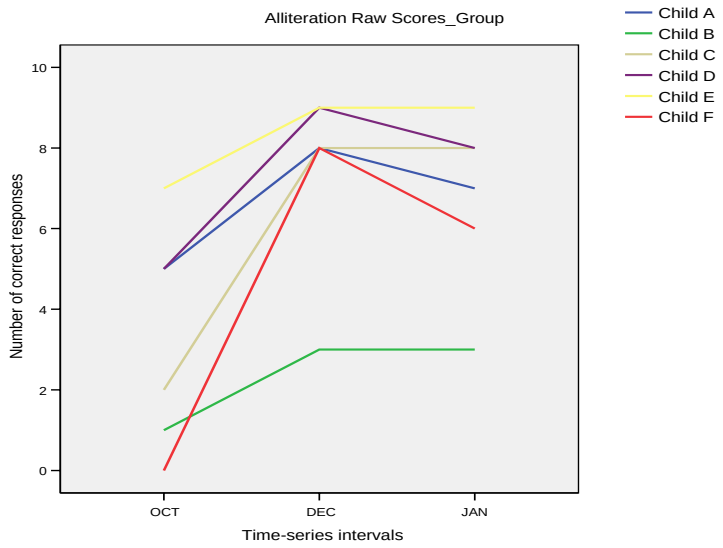
is the extent to which scores deviated from the group mean. Analysis of the individual child's progress is of particular interest in trying to assess the effectiveness of the intervention programme holistically. This study's roots lay in helping the *individual* child overcome their varying phonological difficulties.

The following graphs present the individual child's (Child A-F) progress over T1, T2 and T3 for each measure.

Key:

Child A	Persian
Child B	Norwegian
Child C	Spanish
Child D	Punjabi
Child E	Tswana
Child F	Tamil

4.5.1 Alliteration group_results (raw scores)

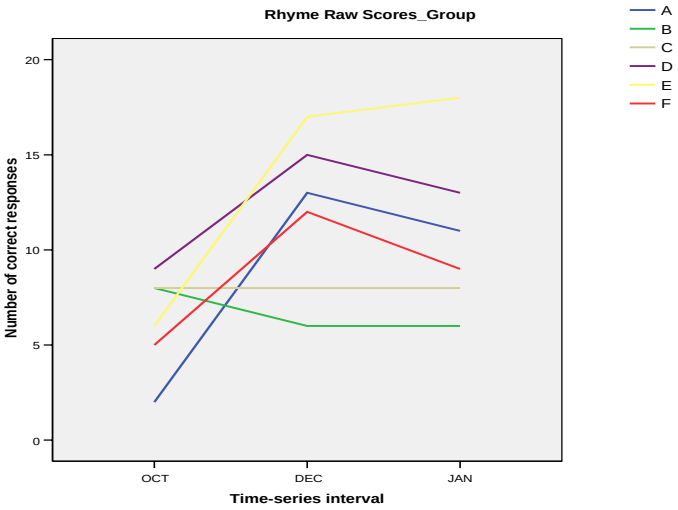


Graph 4.4.1 indicates that there is a trend towards each child making significant progress in their recognition of the initial sounds in words after instruction. The test measurement required the children to correctly state which two words out of the three options began with the same sound. The greatest improvement was made by *Child C Spanish* and *Child F Tamil*. At T1 these two children gave the fewest correct responses. By T2, both were able to confidently demonstrate the skill with eight of a possible ten, correct responses. At T3, each child's individual curves either plateau or show only a very slight regression. This suggests that the children seemed to

retain the skill level even after withdrawal of the intervention. *Child B Norwegian* seemingly made the least progress after testing. However, the *running log* indicates that they were successfully able to demonstrate this skill during the programme activities targeting this area. For example, entry seven stated that;

⇒ *During the 'name game', Child B is able to substitute the first sound in a friend's name and replace it with another. Child B can also recognise the first sound in a given word 9 out of 10 times. The Word Shark computer programme seems to help Child B to use their sound to letter knowledge of simple CVC words such as cat/bat/tap/mo/pot/ and correctly type in the missing initial sound 5 out of 5 times.*

4.5.2 Rhyming group_results (raw scores)

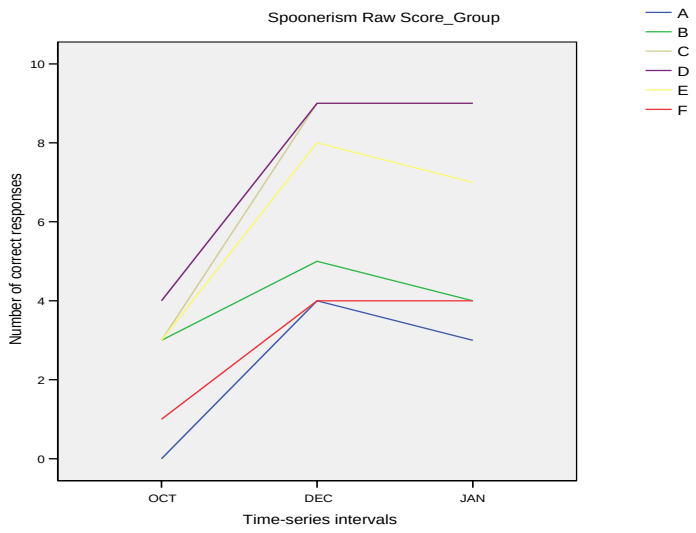


Graph 4.4.2 displays the progress made by each child in the skill of rhyming. The test required each child to correctly state the two words containing the same ending sounds from the three options given. At T1, the results show that each child already had an understanding of the concept of rhyming before programme instruction began, gaining scores of between two and nine correct responses. At T2, the repeated measures analysis showed that $p=.057$ which seems to indicate a trend at the group level. This could be interpreted as the intervention programme having a positive impact on most of the children's rhyming-skills. However, the absence of a control group eliminating any extraneous variables means that any positive findings cannot be *directly* attributable to the intervention programme. Though, it is

interesting to note that four children made steady progress from T1 to T2, and three of them regressed somewhat following the withdrawal of the intervention (T3).

Child C's scores in the rhyme test remained constant throughout the intervention and *Child B'* scores seemed to drop slightly between T1and T2 and then plateau between T2 and T3. At T1 both children understood the concept of rhyming and gave approximately eight correct answers. During the intervention both children performed well in the rhyming activities. The running logs outlined that they both enjoyed the Rhyming Bingo and Rhyming 'Go Fish' games and were able to find almost all of the rhyming pairs. However, during the post-test and follow-up post-test neither were able to improve on their pre-test scores.

4.5.3 Spoonerisms group_results (raw scores)

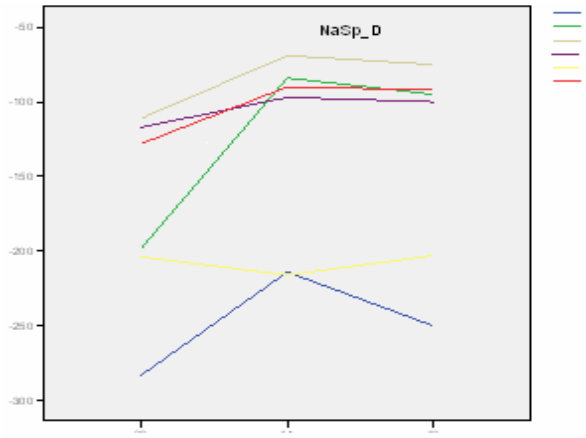


Graph 4.4.3 indicates that each child made progress in the skill of sound substitution. The spoonerisms test (part one only) required the children to substitute the initial sound in a word with a specified alternative. This skill helps children manipulate sounds and begin the development of efficient phonological coding strategies. For example, the children were asked to say the word /dog/ with a /l/ = /log/. *Child A Persian* and *Child F Tamil* found this task particularly challenging during the pre-test stage however, both showed an improvement at T2. Several activities included in the intervention programme **(See Appendix D Summary of programme content)** worked on substituting the initial and final sounds within

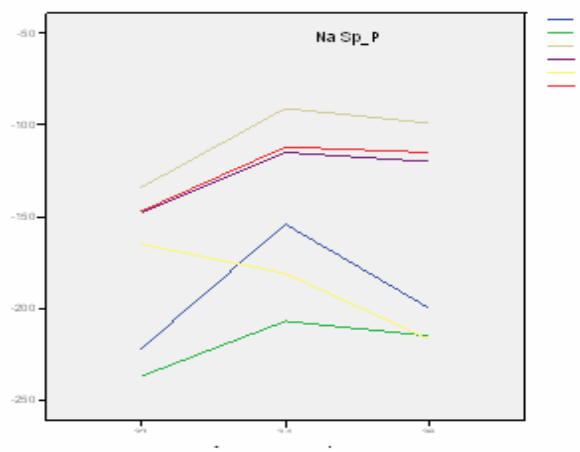
words orally. For *Child A Persian* and *Child F Tamil* the concept seemed difficult to grasp at the beginning stages. In order to help them to understand the skill, simple CVC words that were known to them were written up on to a white board. Together we sounded-out the individual sounds in the word /cat/. The /c/ was erased and replaced with /m/ to make /mat/. We then used the children's own names (friends' names, pets' names etc) and erased the initial sound, replacing it with another of their choice and created some funny sounding names which seemed to amuse them greatly. The visual reinforcement of erasing the initial sound from the white board seemed to help both *Child A* and *Child F* in their understanding of sound substitution.

4.5.4 Naming Speed Tests (raw scores)

a)Naming Speed ***Pictures***



b)Naming Speed ***Digits***

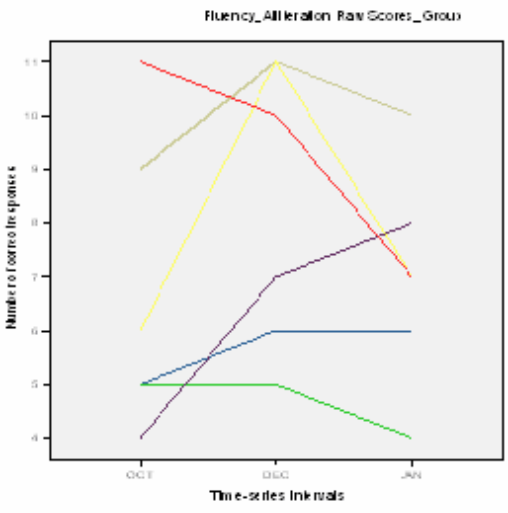


4.4.4 Displays the results of (a) Naming Speed Pictures test and (b) Naming Speed Digits test. The graphs measured the number of seconds the children took to complete the tasks. The longer the children took to complete the naming speed tasks, the slower their phonological processing speed. The Naming Speed skill requires the children to draw on their meta-cognitive skills as they are required to firstly visually process the information before them and then phonologically process it and finally reproduce it orally at the whole-word level. *Child A Persian* and *Child E Tswana* found both the Naming Speed pictures and Naming Speed digits a challenge. These results seem to indicate slow processing capacities. *Child B Norwegian* also displayed deficits in the Naming Speed digits test. Phonological processing requires

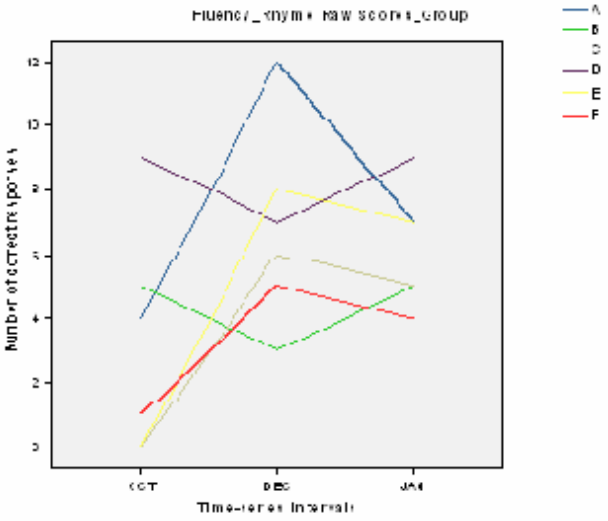
a child to visually process the information displayed and then both tap their phonological memory and access their lexical storage. *Child C Spanish, Child D Punjabi, Child F Tamil* all showed good processing speeds which remained consistent throughout the intervention. Children's speed of processing can vary widely and it is very much dictated by a child's individual neuro-psychological build. It may the case for Child *A Persian, Child E Tswana* and *Child B Norwegian* that they have phonological processing difficulties. However, as *Child A's Persian and Child B's Norwegian* underlying phonological skills began to show improvement there also seemed to be a slight improvement between T1 and T2 in the Naming Speed tasks.

4.5.5 Fluency tests (raw scores)

*(a) Fluency **Alliteration***



*(b) Fluency **Rhyme***

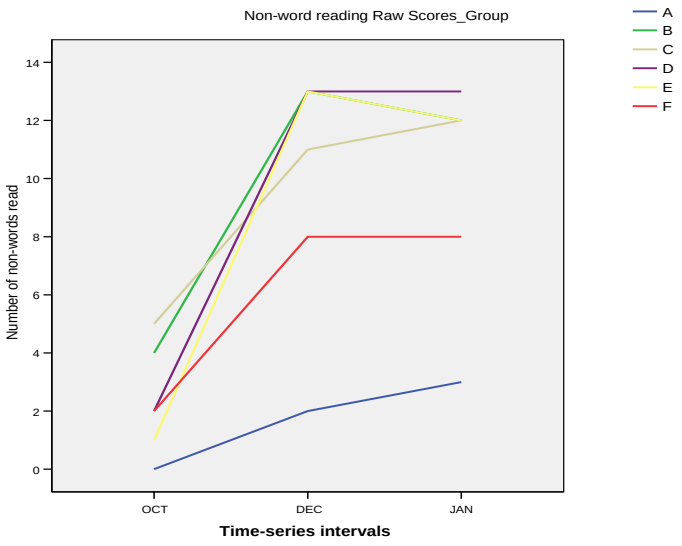


Graphs displayed in 4.4.5 show the results of the fluency alliteration test (a) and the fluency rhyme test (b). These tests measured the way in which children retrieved phonological information from their long-term memory when given an onset/rime trigger sound. The faster and more efficiently a child can call-up phonological sound codes associated with letters, words segments and whole words form memory, the easier they will find it to decode and to develop fluency.

One task in the alliteration test involved naming as many words as possible beginning with /m/ in 30-seconds. Similarly, the rhyme test was also timed and

included naming as many words as possible with the same ending sound as the trigger word. The children's results varied greatly. The fluency alliteration test (a) shows four children making an improvement from T1 to T2, with *Child B Norwegian* showing no change and *Child F Tamil* managing to find one less word within the specified time. At T3, results seem to infer that *Child E Tswana* is unable to retain the skill following programme withdrawal and that *Child F Tamil* has seemingly regressed in this particular area. The running log kept for *Child F Tamil* notes that on this day, they were showing signs of tiredness. Testing had run for almost 30minutes when this was noted. In this instance, I suggest that tiredness could be a possible factor in the decline in *Child F's Tamil* results rather than skill loss due the fact that they still managed seven correct answers within 30-seconds at T3. The fluency rhyme test (b) shows that four children showed good improvement between T1 and T2 followed by a small decline at T3. *Child A Persian* in particular seemed to benefit from instruction in the area of rhyme and this is reflected by greatly improved results in both the *rhyme test* and the *rhyming fluency test.*

4.5.6 Non-word reading group_results (raw scores)



Graph 4.4.6 indicates that *Children B-F* each showed good progress in the *non-word reading test*. This was an unexpected, yet very pleasing result. This skill is represented in Colheart's (1978) dual route reading model. Non-word reading or

the skill of decoding and blending individual phonemes is viewed as the indirect route to the lexicon. Decoding, transforms the graphemes of the written word, letter by letter, into their corresponding sounds (phonemes) and it consequently identifies the word that the sounds have combined to make. This is an important skill for a child, particularly in their quest to become an independent reader.

Child A Persian also showed progress in this skill though not to the same extent. Child A's ability to grasp the concept of decoding individual phonemes was sustained and scores even rose a little at T3. Indeed the group-level improvement made in this test was the greatest out of all the sub-tests in the battery, with the significance measurement p=.004 indicating an encouraging trend. The non-word reading test appeared as the last test in the PhAB battery due to its complexity. Like Chard and Dickson's model of phonological complexity (1999), the segmentation and blending of the individual phoneme is viewed as the most complex phonological skill. At T1, *Child A Persian* was unable to decode any of the non-words presented, but by T2 was able to decode two. The positive results from T1 to T2 for Child B-F also, seem to give weight to the intervention programme playing a part in heightening the phonological skills required for the beginning stages of reading. Each child made improvement over the eight weeks. For example at T1, *Child E Tswana* was able to read one non-word and *Child D Punjabi,* two, but by T2 they were both able to read thirteen. The progress noted in the running logs, seemed also to support the results of the PhAB test battery. For example, one entry stated;

> ⇒ *Child D is becoming more and more confident in decoding both non-words and real words. The Word Shark spelling programme seems to be helping to develop sound-letter correspondences with a 90% success rate in the spelling of simple CVC words in one spelling game.*

4.6 Chapter summary

This chapter has presented the results of this research study at both the group-level and individual level. I used descriptive statistical analysis and a *t-test analysis* to measure the changes in phonological skill development between T1 and T2. I also

analysed children's skill development between T2 and T3 following the withdrawal of the programme. The findings will be further discussed in Chapter Five.

5. Chapter Five: Discussion and considerations

5.1 Overview and general discussion of findings

This study investigated whether a programme offering additional phonological awareness training would help L2 at-risk beginner readers develop the phonological skills needed to learn to read. Results show that each child participating in the programme had made progress in developing their phonological skills over the eight-week instructional period (12 sessions). However, whilst each individual child seemingly made progress in the development of their phonological skills, they did so at varying rates. At T3, following programme withdrawal, skill development either plateaued or showed slight regression. Overall analysis of the data indicates that there is a trend towards significant skill change at group level in several areas and that the programme had a positive effect. Analysis of the individual profiles indicates that there is a wide variation in scores gained between each child within the group.

Chard and Dickson's (1999) model of phonological awareness displayed phonological development as a continuum of complexity with ability in rhyming and alliteration deemed to be less complex than skills in phonemic awareness. The non-word reading test in the PhAB battery assessed the children's phonemic awareness. Interestingly, the greatest skill increase at group-level (T1, M=2.3 and T2, M=10.0) was found in this skill area. However, the Standard Deviation measure rose from 1.8 at T1, to 4.3 at T2 indicating that there was an increased spread of data at the individual level. At T1, one child was unable to decode any of the non-words presented, and three others were only able to decode two words or less. By T2, all children were able to decode at least two words with five of the children able to decode eight non-words or more. The results were pleasing, particularly for *Child A Persian,* who was initially unable to decode any of the non-words. This child may have benefited from a continued intervention or indeed more frequent sessions as they were showing good skill acquisition at the end of the intervention period.

The results for the Naming Speed tests were also of particular interest as they highlighted those L2 children whose phonological deficits may be aligned to a slower processing speed. The tests offered an insight into each child's ability to not only process phonological information but to visually process the stimuli, retrieve the phonological information and then orally reproduce it at the whole-word level. *Child A Persian, Child B Norwegian* and *Child E Tswana* generally seemed to struggle on the naming speed tasks which suggest a slower processing capacity. However, I am aware that drawing conclusions regarding a child's slow processing speed should be made with caution especially with regards to young L2 learners. Although each of the three struggling children was able to orally identify the visual stimuli with relative ease in the practice trial (ie. the numbers 1-9 and pictures selected with the least cultural bias such as a door, table, hat, ball and a box), during the actual tests, their processing speeds were slow. It should be remembered that they were processing these digits and pictures in a second language. If it were also possible to conduct the same test in each child's mother-tongue language, then perhaps more in-depth conclusions could be drawn with regards to possible phonological processing difficulties. Processing speeds are very much dependent on the individual child. It is not possible to suddenly make a child process faster. However, it is possible to support processing speed by making the children's *word processing* more efficient. For example, this intervention aimed to help the children to develop strategies that enable them to become more familiar with larger phonological units such as syllables, onset-rime and more flexible in their use of these.

It seems that many children who readily pick up rhyme and alliteration have little difficulty acquiring phoneme awareness once they have received instruction. However, sensitivity to the larger phonological segments such as syllables, onsets-rime, will not lead automatically to phoneme awareness even in adults. For most children, reading is an unnatural and relatively lengthy process that is reliant on a combination of linguistic awareness, cognitive skills and explicit instruction. Rich language and literacy experiences and interactions from birth have proved influential to the acquisition of the linguistic skills necessary for reading. Indeed, such is the

strength of the relationship that children who begin school with limited language proficiency can be at-risk of experiencing difficulties in learning to read (Scheffner-Hammer et.al., 2003; Roseberry-Mckibbin, 2003; Hartas, 2005).

The children selected to take part in this study were each learning English as a second language and struggling to develop their phonological awareness skills, and subsequently the emergent literacy skills needed to begin learning to read. Previous studies conducted among monolingual populations *at-risk* of reading difficulties showed that the more explicit skill-based approaches to reading such as phonological awareness training and phonics instruction, have proven to be effective when employed within a meaningful context that successfully draws on a child's meta-linguistic skills and cultural experiences (Hatcher et al., 1994; National Reading Panel, 2000; Snowling et al., 2004; Shankweiler and Fowler, 2004). The results of this study converge with these findings whilst also recommending that training in phonological awareness skills alongside a structured and meaningful reading programme can also have a beneficial effect on the at-risk multilingual population.

5.2 Assessing literacy in the L2 beginner reader; intervention considerations

This study used Vygotsky's Zone of Proximal Development theory and dynamic assessment as a basis for assessing the L2 beginner reader. Teacher-generated assessments and in-class observations were used as a means of identifying children who were remaining at the beginner level and were displaying continued difficulties in developing the emergent literacy skills required to begin reading. Although standardised testing can be valuable, it does not in itself help the teacher plan ways to facilitate further learning which is perhaps the central aim of assessment. Identifying ways in which a young L2 beginner reader can be supported to develop their emergent skills so as they can master more of the curriculum is a challenge and cannot be achieved through standardised testing alone. A teacher's ability to assess the individual needs of the pupil and plan for individual learning, as

well as their ability to link these to curriculum content, may be key to a pupil's social, academic, cognitive and language development in the regular classroom (Johnsen 2001).

Dynamic Assessment methods that attempt to remove cultural bias and are ongoing are perhaps the best indicators of measuring the development and potential development of an at-risk L2 beginner reader. Once initial assessments have been carried out it is important that instructional strategies are adapted/continuously modified and can address learning difficulties to help each child reach their potential development. I used 'Running Logs' to qualitatively record the progress made by the children during the weekly activities. Tasks that the individual child completed with ease and similarly the areas they found challenging, were noted down. This not only helped me to record what they were able to master but also plan which skills to work on in the following week's activity. Additional recorded information included informal comments made by the class teachers and any comments made spontaneously by parents and the children themselves. The comments recorded, also provided a good way of determining whether the phonological programme was viewed as a positive addition to the children's curriculum. 5.2.1 Displays a few selected quotes recorded in the running logs.

5.2.1 Feedback regarding the intervention programme

- ⇒ During the activity using the phonic flicker flip charts Child F excitedly claimed *"Look! These words all have the same ending. I can take the /b/ from /bat/ and put in a /c/ and it spells /cat/. I can spell lots of words this way! See!"*
- ⇒ Session 4: Child C stated *"I can read lots of things now"*.
- ⇒ *"Child B seems much more confident in trying to read and she is even trying to 'sound-out' words she doesn't know."* (Teacher)
- ⇒ *"Child A loves coming to do 'sound work' with you, she looks forward to it every week. She especially likes the rhyming bingo!"* (Parent)
- ⇒ *"Things are starting to come together for Child E, he's really trying very hard with his reading"* (Teacher)

⇒ *"Child D is progressing well in literacy lessons, I think the extra attention he is getting in the 'phonological group' is helping".* (Teacher)

These comments were just a few selected from the children, parents and teachers involved in this study. The children seemed to react very positively to the programme and the activities and always wanted to attend each session. I am aware that sometimes children may feel a stigma attached to receiving additional help in their work. However, the comments and observations recorded, lead me to believe that this was not the case with the six children taking part here. It was somewhat amusing that many of their peers also expressed their wishes to come and do 'Sound-Work' as I collected the children from their classrooms! After a few sessions several of the children taking part would often ask to re-do an activity such as Rhyming Bingo just to show me how good they were with their rhyming. The 'Word Shark' computer programme was a particular favourite with each of them. This programme gave both an audio and a visual cue to the spelling of words. The word lists were tied to the class literacy curriculum and could be adapted to the level of each individual child. This computer programme was particularly helpful in promoting the children's phoneme-grapheme understanding. Previous studies, such as the one conducted by Fasting and Lyster (2005) have attempted to measure the effects of computer technology in assisting the development of literacy in young struggling readers and spellers with some very positive outcomes. Indeed this could be an area for further research.

In general, the response to the intervention programme was overwhelmingly positive by all parties concerned. Perhaps most satisfying were the observations and comments made regarding the children's new found confidence in attempting to read. For example, they readily took part in small reading groups with their peers in-class, and during the intervention sessions, they worked well together and helped one another to spell more tricky words on the Word Shark programme.

5.3 Cultural considerations

This study began by highlighting the phenomenon of the culturally and linguistically diverse classroom and the opportunities and challenges that this can present. It concludes with the belief that recognizing and embracing cultural diversity at the emergent literacy stage and beyond is vital to helping a child learn to read. The school system and class teacher can play a central role in ensuring that any barriers are broken down to reduce the risk of reading failure among L2 children. By gaining a holistic understanding of a child's linguistic and cultural background, a teacher may be better equipped to adapt lessons to include the diversity of cultural interactions and experiences into literacy tasks. For example, this may mean using culturally familiar texts and building on the child's cognitive strengths and primary language (Cummins, 2000; Lyster, 2005).

Conversations that spring from a text can be an invaluable way of bridging linguistic skills and reading. *Scaffolding* a text (Bruner, 1987) can be used to prompt children's ideas and thoughts about what is happening and as a means of introducing new vocabulary. From here, it is possible to include the phonological language play advocated by Holdaway (1982), such as asking the children to call out the words that sound the same at the end, or to listen out for the words that start with the same sound. The *Dr. Suess* books, for example, used in the intervention programme were a good tool for helping children to recognise simple rhyming words. Songs, nursery rhymes, rhyming games and language play are all great ways of nurturing phonological awareness in the early years. Visual support, where possible, seemed also to play an important role in supporting children's involvement and understanding of concepts whilst enriching their experiences. Puppets, props and classroom displays can act as triggers for children to remember and recount what they saw, what they did and how they did it (Datta, 2000). In general, research has shown that classroom role play areas, encouraging spontaneous interaction and language use, and quiet corners where children can more easily engage in listening activities or pick up a picture book can also be invaluable in creating a language rich and

culturally sensitive classroom environment (Skjørten, 2001). Ultimately an environment that is conducive to learning many linguistic and cognitive skills, including learning to read.

5.4 Conclusion and recommendations

Reading difficulties can have cognitive, behavioural and motivational consequences that slow the development of other cognitive skills and inhibit performance on many academic tasks. Children at-risk may begin to fall further and further behind their peers because so much of the curriculum is dependent on being able to read and write. Stanovich (1986) in Adams (1990:59) quotes the words of a tearful nine year old, already falling frustratingly behind his peers in reading progress, *"Reading affects everything you do"*.

The effects of reading difficulties on a child in the early stages can be damaging and lasting if left unattended. However, it is possible to halt the decline in performance of young L2 children. Training programmes in phonological awareness implemented alongside a structured reading programme can develop and support a child's emergent skills. Teachers, Teaching Assistants (TA) and caregivers can play a vital role in supporting and guiding a child in his or her quest to reach the next level of their development. The recent *Nuffield Language for Reading Project* conducted by Snowling, Hulme, Caroll and Miles *(2004-2007)* emphasised the importance of teaching assistants (TA's) in helping children at-risk of literacy failure due to poor speech and language skills at school entry. Teaching assistants were trained to implement two different intervention programmes which returned positive results both in terms of the children's skill development, and also, the personal development of the teaching assistants themselves. A school with teaching assistants has an invaluable resource. Indeed an intervention programme such as the one conducted in this study could easily be conducted by teaching assistants. Like the Nuffield project, teaching assistants could be trained to support at-risk beginner readers develop skills

in phonological awareness and even the wider oral language skills so vital for learning to read.

In-class, it seems that L2 beginner readers at-risk can benefit from literacy lessons that make use of visual aids, cues, questioning (which allows the child to explore his/her surroundings to find answers), group work with peers, modeling and unfailing encouragement. Literacy development may be greatly influenced by a combination of detailed and ongoing assessments of the child's needs and adapted teaching instruction to meet these. It may also be influenced by a child's social interaction and communication with peers during 'play' (Hadley & Rice, 1991).

Learning to read in English as a second language is a challenge. As highlighted in Chapter Two, often the English orthography does not fully represent the phonemic structure of the spoken language. Aro (2004) described English as morphophonemic in a nature and cites Venezky (1970) when explaining that the spelling of roots in English is basically phonemic whereas the spelling of compounds and derivatives tends to be morphemic. Homophones such as /sight/ /site/ and /cite/ are examples of the morphophonemic nature of the English orthography. This study comprised children of six different mother-tongues and six very different orthographies. Getting to grips with the English orthography will take time. As an L2 child's reading develops, Goswami and Bryant (1990) suggest that familiarity with the English alphabetic script will in turn have an effect on their awareness of sounds. They state that "*children begin to detect and recognise phonemes as a direct result of being taught to read and write such a script" (1990:148)*. Previously, Frith (1985) had highlighted the reciprocal nature of phonological skills and reading and spelling and the way in which they interact and facilitate each other. This infers that experiences children have when they read influence the way they spell, and likewise their knowledge of spelling will affect their reading.

A study by Aro (2004) explored the effects of different orthographies in learning to read, with a specific focus on the development of literacy skills in Finnish. Lyster (2001) had found that reading development is highly correlated with spelling

and the ability to encode words in their correct orthographic form. Studying the impact of orthographies on a child's reading development could be an area for further study. Results of such a study could prove especially interesting with a sample population similar to the one used here, particularly with orthographies that range from the alphabetic, with roots in Latin and Arabic, to the Syllabic /Abugida writing systems.

Since this study's beginnings, the school in which the research was conducted has introduced a new *'Benchmark Reading Assessment Tool'* with the aim of gaining a more accurate identification of a child's reading capabilities. If I were to replicated or build upon this study in the future, I would consider using such a tool to form part of a dynamic assessment approach that would specifically measure reading development over precise time-series intervals. I would also consider offering an intervention programme to children in different age groups to gauge whether such a programme would have a similarly positive effect among slightly older children experiencing similar difficulties.

This study began by introducing the difficulties experienced by many children in learning to read and write, and investigated the way in which developing a child's phonological skills could impact reading development at the beginning stages. The rationale behind the training study was triggered by seeing the damaging and lasting effects that reading failure can have on a child's motivation and self-esteem to learn. L2 beginner readers at-risk of reading and spelling failure not only seemed to improve their phonological awareness skills following additional instruction but were also very positive towards the programme. Programmes offering additional instruction in phonological awareness may go a long way in helping to support and develop a child's emergent skills, whilst also freeing them of some of the initial frustrations they may feel.

List of references

Adams, M., Foorman, B., Lundberg, I., & Beeler, T (1998). Phonemic awareness in young children. Baltimore: Brookes.

Adams, M.J., Treiman, R. & Pressley, M. (1998). Reading, writing and literacy. In W.Damon (ed.) *Handbook of child psychology* (5th edition, vol. 4, pp.275-355). New York: Wiley.

Adams, M.J. (1990). Beginning to Read, thinking and learning about print. Massachusettes Institute of Technology Press.

Anderson, P.J., & Graham, S.M. (1994). Issues in second language phonological acquisition among children and adults. *Topics in language disorder* pp84-100.

Beech, J.R. (2005). Ehri's model of phases of learning to read: a brief critique. *Journal of Research in Reading.* Vol 28 Issue 1 pp50-58

Blaiklock, K.E. (2004).The importance of letter knowledge in the relationship between phonological awareness and reading. *Journal of research in reading* Vol 27 Issue 1, pp36-57 Blackwell Publishing.

Bryant, P.E., Bradley, L., Macleon, M., & Crossland, J. (1989).Nursery rhymes, phonological skills and reading. *Journal of Child Language* Vol 16 pp407-428

Byrne, B. (1998). The foundation of literacy: The child's acquisition of the alphabetic principle. Hove, UK: Psychology Press

Campbell, D.T., & Stanley, I.C. (1963). Experimental and quasi-experimental designs for research. Chicago: Rand McNally

Carrol, J.M., Hulme, C., Snowling, M.J. & Stevenson, J.,(2003). The development of phonological awareness in preschool children. *Developmental Psychology* Vol 39 Issue 5 pp913-923

Chall, J.S., (1996). Stages of reading development. Harcourt Brace & Company. Florida:USA

Chall, J.S., (1990). The reading crisis. Why poor children fall behind in reading. Cambridge, MA Harvard University Press.

Chard, D.J., Dickson, S.V. (1999). Phonological awareness: Instructional and assessment guidelines. Retrieved 23rd December 2006 from, www.ldonline.org/aricle/6254

Chomsky, N. & Halle, M. (1968). The sound pattern of English. New York: Harper & Row

Clark & Clark (1977) *Psychology and language: An introduction to psycholinguistics.* Harcourt Javanovich. New York

Clarke, P., Hulme, C., & Snowling, M. (2005). Individual differences in RAN and reading: a response timing analysis. *Journal of Research in Reading* Vol 28, Issue 2, pp 73-86

Cline, T. & Shamsi, T. (2000). Language needs or special needs? The Assessment of learning difficulties in literacy among children learning English as an Additional Lanaguage: A literature review. *Department for Education and Skills.* London:UK

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* (2nd. ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Cohen, L., Manion, .L., & Morrison, K. (2003). *Research methods in education* (5th. ed.). RoutledgeFalmer: London and New York

Coltrane, B. (2003). Working with young English language learners: some considerations. *ERIC Digest*. Retrieved March 20th 2007, from, http://www.cal.org/resources/digest/0301coltrane.html

Cummins, J (1981). *Bilingualism and minority-language children.* Toronto: Oise Press

Cummins, J (2000*). Language, Power and Pedagogy*. Clevedon: Multilingual matters.

Cummins, J. (2002). *Scaffolding language, scaffolding learning:* Teaching second language learners in the mainstream classroom. Portsmouth, NH: Heinemann

Datta, M. (2000). *Bilinguality and Literacy: Principles and Practice.* Continuum Publishing, London.

DeCasper, A,. & Gerhardt, K (2004). Research adds to evidence that unborn children hear 'melody' of speech. Retrieved March 23rd 2007, from, http://www.scienceblog.com/cms/node/2192

Dixon-Krauss, L. (1996). *Vygotsky in the classroom; mediated literacy instruction and assessment.* Longman Publishers USA.

Dockrell, J. & Lindsay, G. (1998).The ways in which speech and language difficulties impact on children's access to the curriculum *Journal of Child Language and Teaching* pp.117-130.

Ehren, B.J. (1999). The role of speech-language pathologists in facilitating emergent literacy skills. *ASHA*. American speech-language-hearing association

Ehri et al. (2001). Phonemic awareness instruction helps children learn to read: Evidence from the National Reading Panel's meta-analysis. *Reading Research Quarterly*, Vol 36, Pages 250-287.

Eidse, F. & Sichel, N. (2004).*Unrooted Childhoods*. Nicholas Brealey Publishing; 1st edition

Fredericks (2001). *The complete phonemic awareness handbook*. Rigby Press.

Frederickson, Frith & Reason (1997) *Phonological Assessment Battery.* Windsor: NFER-Nelson

Goswami, U.,& Bryant (1990). *Phonological skills and learning to read*. London: Lawrence Erlbaum Associates Ltd., Publishers

Gutiérrez-Clellen, V.F., & Peňa, E.(2001).Dynamic assessment of diverse children: a tutorial *Language, Speech and Hearing Services in Schools* Vol 32 pp212-224 ASHA

Hammer, C.S., Miccio, A.W., Wagstaff, D.A. (2003). Home literacy experiences and their relationship to bilingual preschoolers developing English literacy abilities: An initial investigation. *Language, speech and hearing services in schools.* Vol 34, pp 20-30. American speech-language-hearing association.

Harbas, H.M., Paden, E.P., & Halle, J.W. (1999). Phonological awareness and production: changes during intervention. *Language, Speech and Hearing Services in Schools* Vol 30 pp50-60 ASHA.

Hartas, D. (2005). *Language and communication difficulties*. Great Britain: MPG Books ltd.

Hatcher, P.J., Goetz, K., Snowling, M.J., Hulme, C., Gibbs, S., & Smith, G. (2006). Evidence for the effectiveness of the Early Literacy Support programme. *British Journal of Educational Psychology* Vol 76 pp351-367

Hatcher, P.J., Hulme, C. et al. (2006).Efficacy of small group reading intervention for beginning readers with reading-delay: a randomised controlled trail. *Journal of Child Psychology and Psychiatry* Vol 47 Issue 8 pp820-827

Hatcher, P.J., Hulme, C. & Snowling, M.J., (2004).Explicit phoneme training combined with phonic reading instruction helps young children at risk of reading failure. *Journal of Child Psychology and Psychiatry* Vol 45 Issue 2 pp338-358

Hatcher, P., Hulme, C. & Ellis, A. (1994). Ameliorating early reading failure by integrating the teaching of reading and phonological skills: The phonological linkage hypothesis. *Child Development* Vol 65 pp41-57

Hogan, Catts & Little (2005). The relationship between phonological awareness and reading: implications for assessment. *Language, Speech and Hearing Services in Schools*, Vol 36 No.4

Holdaway, D., (1979). *The foundations of literacy*. Ashton Scholastic Publishing: Sydney Australia.

Holdaway, D., (1982). *Shared book experience: Teaching reading using favourite books. Theory into Practice.* Ashton Scholastic Publishing: Sydney Australia

Hulme, C., Hatcher, P.J., et al. (2002). Phoneme awareness is a better predictor of early reading skill than onset-rime awareness. *Journal of Experimental Child Psychology* Vol 82 pp2-28.

Johnsen, B.H., & Skjørten, M.D. (2001). *Education – special needs education: An introduction*. Unipub forlag

Kamhi, A.G., & Catts, H.W.,(1991). *Reading disabilities; a developmental language perspective.* Little, Brown & Company, Massachusettes USA

Krashen, S. D. (1988). *Second language acquisition and second language learning*. Prentice-Hall International.

Laing, S.P., & Kamhi, A. (2003).Alternative assessment of language and literacy in culturally and linguistically diverse populations. *Language, Speech and Hearing Services in Schools* Vol 34 pp44-55 ASHA

Liberman, I.Y. & Shankweiler, D. (1991). Phonology and beginning reading: A tutorial. In L.Reiben & C.A. Perfetti (Eds), *Learning to read: basic research and its implications, 3-17.* Hillsdale, NJ: Lawrence Erlbaum Associates

Ljundberg, Frost & Petersen, (1988).Effects of an extensive program for stimulating phonological awareness in pre-school children. *Reading Research Quaterly* Vol 23 pp263-284

Lyster, S.A. (2005).Challenges learning to read in a second language: Reading development and reading difficulties of second-language learners. Department of Special Needs Education, University of Oslo. Unpublished

Lyster, S.A. (2001).Language and Reading: development and disorders in Johnsen,B.H. & Skjørten, M.D. (2001) *Education – Special Needs Education: An Introduction.* Unipub forlag.

Lyster, S.A. (1995). Preventing reading and spelling failure: The effects of early intervention promoting meta-linguistic abilities. *Doctoral Thesis*. Institute for Special Education, University of Oslo.

Macaruso, P. et al (2006). The efficacy of computer-based supplementary phonics programs for advancing reading skills in at-risk elementary students. *Journal of Research in Reading* Vol 29 Issue 1 pp162-172

McGuiness, D. (1998). *Why children can't read and what we can do about it.* Harmondsworth: Penguin Books.

Muter,V.,& Diethelm, K. (2001).The contribution of phonological skills and letter knowledge to early reading development in a multilingual population. *Language Learning* Vol 51 Issue 2 pp187-219

Muter, V., Hulme, C., Snowling, M.J. & Stevenson, J., (2004). Phonemes, rimes, vocabulary and grammatical skills as foundations of early reading development: evidence from a longitudinal study. *Developmental Psychology* Vol 40 Issue 5 pp665-684

Nation, K. & Snowling, M.J. (2004). Beyond phonological skills: broader language skills contribute to the development of reading. *Journal of research in reading* Vol 27, Issue 4, pp342-356. Blackwell publishing.

Nation, K. & Hulme, C. (1997). Phonemic segmentation, not onset-rime segmentation, predicts early reading and spelling skills. *Reading Research Quarterly* Vol 32 Issue 16 pp154-167.

National Reading Panel Report (2000). Retrieved October 12th 2006, Teaching children to read: findings and determinations. http://www.nichd.nih.gov/publications/nrp/findings.cfm

National Union of Teachers (2002). Relearning to learn. London : NUT. A report based on best practice in working with refugee and asylum-seeker pupils. Retrieved October 12th 2006, from, http://www.teachers.org.uk/resources/pdf/RelearningtoLearn.pdf

Opie, C., (2006). *Doing educational research: a guide to first time researchers.* Sage Publications:London.

Palmer, S. (2006).*Toxic Childhood.* Orion Publishing

Phillips, B. (2007). Emergent Literacy: what is it and why does it matter? Retrieved April 14th 2007 http://www.fcrr.org/science/pdf/Phillips/EmergentLiteracy.pdf Florida Centre for Reading Research.

Pressley, M. (1998).Reading instruction that works: The case for balanced teaching. New York: Guildford Press

Reid-Lyon, G. (1999). The NICHD Research Program in Reading Development, Reading Disorders and Reading Instruction. Retrieved February 12th 2007, from http://www.ncld.org/index.php?option=content&task=view&id=524

Robertson,C. & Salter,W. (1995) *The phonological awareness book.* LinguiSystems: Illinois, USA.

Robson, C. (2005): *Real world research.* (2nd. Ed.). Blackwell publishing : Oxford UK

Rogers, H. (2005). *Writing Systems: A Linguistic Approach*. Oxford: Blackwell.

Roseberry-Mckibbin, C. (1994). Assessment and intervention for children with limited English proficiency and language disorders : a tutorial pp77-88. *American Speech-Langugae Hearing Association (ASHA)*

Roseberry-Mckibbin, C. (2003). Assessment of Bilingual Learners: Language difference or disorder? *American Speech-Language Hearing Association. Academic Communication Associates.*

Scheffner-Hammer, C. & Miccio,A.W., Wagstaff, D.A., (2003) Home literacy experiences and their relationship to bilingual preschoolers' developing English literacy abilities: An initial investigation. *Language, speech and hearing services in schools.* Vol 34, pp20-30 published by ASHA.

Schankweiler, D. & Fowler, A.E., (2004): Questions people ask about the role of phonological processes in learning to read. *Reading and Writing: An Interdisciplinary Journal.* Vol 17 pp483-515

Snowling, M.J., & Nation, K. (2004): Beyond phonological skills: broader language skills contribute to the development of reading. *Journal of Research in Reading* Vol 27, Issue 4. pp.342-356

Snowling, M.J., & Stackhouse, J., (1996) *Dyslexia, Speech and Language: a practitioner's handbook.* Whurr Publishers: London.

Snowling, M.J et al., (2007) The Nuffield Language for Reading project, http://www.york.ac.uk/res/crl/crl_Nuffield.html Retrieved: 27/5/07

Stanovich, (2000). *Progress in understanding reading.* New York, NY: Guilford.

Storkel, H.L., & Morrisette, M.L. (2002): The lexicon and phonology: interactions in language acquisition. *Language, Speech and Hearing Services in Schools* Vol 33, 24-37 ASHA.

Strickland, D.S. (1999). Foreword. In Gambrell, L.B, Morrow, L.M., Neuman, S.B., & Pressley, M. (eds) *Best practices in literacy instruction (pp.xix-xx).* New Yrk: Guildford Press.

Sulzby, E. (1991): The development of the child and the emergence of literacy. In J.Flood, J.Jensen, D.Lapp & J.Squire (eds) *Handbook of research on teaching the English Language Arts* (pp.273-285). New York: Macmillan.

Swanson, Hodson & Schommer-Aikins (2005). An examination of phonological awareness treatment outcomes for seventh-grade poor readers from a bilingual community. *Language, Speech and Hearing Services in Schools*, Vol 36 No.4 Pages 346-349. ASHA

Tallal, P. (2003). Neuroscience, Phonology and Reading: The Oral to Written Language Continuum. Transcript of an interview. Retrieved March 22nd 2007, from, http://www.childrenofthecode.org/interviews/tallal.htm

Thomas and Collier (1997) *School effectiveness for language minority students.* Washington DC:National Clearinghouse for Bilingual Education .

Torgesen, J.K., & Mathes, P.G. (2000): *A Basic Guide to Understanding, Assessing, and Teaching Phonological Awareness*. Pro-Ed publishing

United Nations (2005). *Trends in Total Migrant Stock* New York: United Nations. Such figures omit an unknown number of undocumented migrants, who may or may not be counted in official data. Retrieved March 12th 2007, from, http://www.unfpa.org/publications/detail.cfm?ID=313&filterListType=

Vygotsky, L. (1978). *Mind in Society: The development of higher psychological processes.* Cambridge MA: Harvard University Press

Vygotsky. L. (1986) *Thought and Language*, Edited by Kozulin. The Masachussetts Institute of Technology.

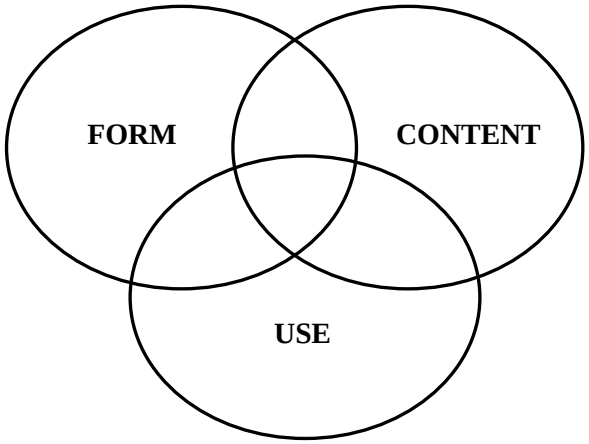
Wellington, J.J. (2000). *Educational research: contemporary issues and practical approaches.* London: Continuum.

Westwood, P. (2003): *Reading and Learning Difficulties; Approaches to teaching and assessment.* The Australian Council for Educational Research Ltd.: BPA Print Group.

Wood, R. (1991). *Assessment and Testing*: *A survey of research commissioned by the University of Cambridge Local Examinations Syndicate.* Cambridge: University of Cambridge Press.

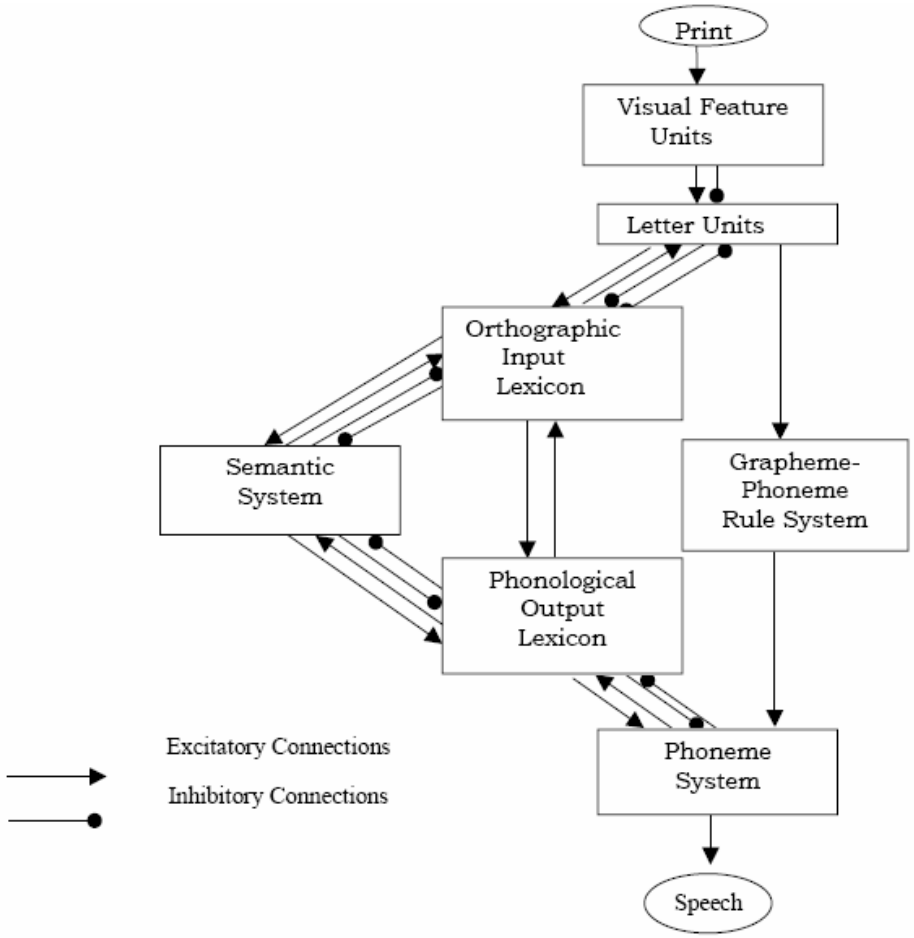
Appendices

A) Model of language; Bloom and Lahey (1978)



Bloom and Lahey (1978) divided language into three component parts; Content, Use and Form. *Content* is the component of language that involves meaning; it maps knowledge about objects, events, and people and the relationship among them. Semantics, as a subsystem of *content* refers to word meaning. *Use* refers to the purpose of communication and the different contexts in which words can be used. Pragmatics, as a subsystem of *use*, refers to understanding the communicative intentions of the sender (the author in this instance) and being able to receive the message, reflect, respond, interact appropriately in order to maintain a dialogue. *Form* refers to the linguistic elements that connect sound and symbols – it includes rules of how to make and manipulate words and sentences – the foundations of which are embedded in phonological awareness.

B)The Dual-route model of Reading Development; Coltheart (1978)



C) Samples of the Phonological Assessment Battery (Frederickson, Frith, Reason, 1997)

⇒ *Alliteration test sample*

Note: The words must be presented *orally*. You must not let the child see the words written down. Only use letter *sounds*, not letter names. In the practice items initial sounds of words are given much emphasis (e.g. mmmat) but initial sounds are *not* stressed when administering the test items.

Part 1 practice items

A. **shop** **mat** **shell**

*'I am going to say three words. Ready – **shop, mat, shell**.*
Two of them start with the same sound. Listen again (sustain the initial sound) – ***shshshop, mmmat, shshshell***. *Which two words start with the same sound?'*

If the child gives the correct answer:
*'Yes, **shop** and **shell** start with the same sound.'*

If the child gives the wrong answer:
*'Listen, the words that start the same begin with shshsh. **Shshshop** begins with /sh/ and **shshshell** begins with /sh/ but **mmmat** doesn't begin with /sh/, it begins with /m/. So it's **shop** and **shell** that start with the same sound.'*

B. **lot** **mess** **mud**

*'Here are some more words. Ready – **lot, mess, mud**.*
Two of them start with the same sound. Listen again (sustain the initial sound) – ***llllot, mmmess, mmmud***. *Which two words start with the same sound?'*

⇒ *Rhyme test sample*

Directions

Note: The words must be presented *orally*. You must not let the child see the words written down. An emphasis on end sounds is *only* allowed in the three practice items. End sounds are not stressed when administering the test items.

Practice items

A. **sail** **boot** **nail**

*'I am going to say some words and I want you to tell me which two sound the same at the end. Listen – **sail, boot, nail**.'*

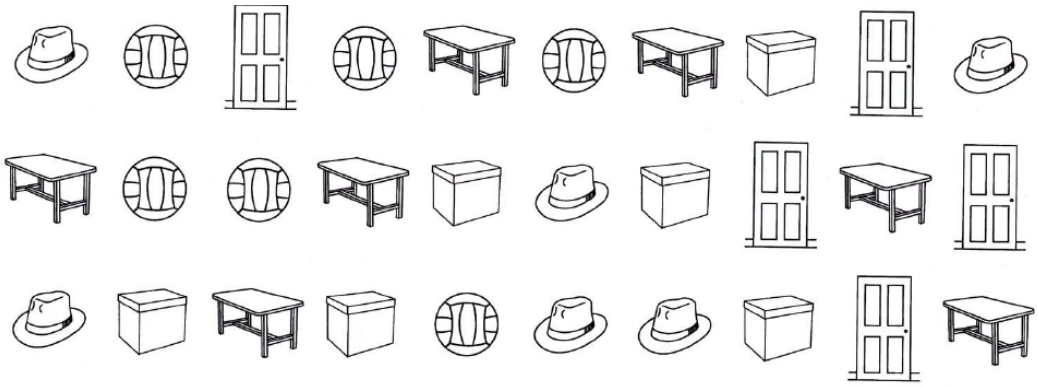
If the child gives the correct answer:
*'Yes, **sail** and **nail** sound the same at the end.'*

If the child gives the wrong answer:
*'Can you hear how **sail** and **nail** both end with an /ail/ sound, but **boot** has a different sound at the end? So the answer is **sail** and **nail**. They sound the same at the end.'*

B. **red** **fed** **leg**

*'Let's try another one. Listen and tell me which two sound the same at the end – **red, fed, leg**.'*

⇒ *RAN -Naming speed test_pictures sample*



⇒ *RAN - Naming speed test_Digits sample*

58869 29852 24651 54919 36849 49354 26892 12463 81845 29496

⇒ *Spoonerisms test sample*

Directions

Note: The words must be presented *orally*. You must not let the child see the words written down. Letter *sounds* are used throughout; letter names must not be used. The symbol /f/ stands for the letter sound, *not* the letter name.

Part 1 practice items

A. **cat** with a **/f/** gives (fat)

*'We are going to play a game with words and sounds. Listen – **cat** with a /f/ gives **fat**. You see, you take the /c/ from **cat** and put in a /f/ to make **fat**. So, **cat** with a /f/ gives …'*
Encourage the child to answer/say the answer with you.
*'… /f/ … /f/ … **fat**.'*

Praise the child's efforts.

B. **lip** with a **/t/** gives (tip)

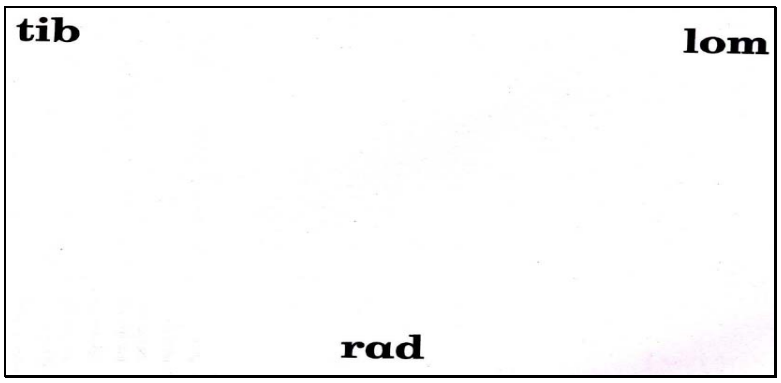
*'OK, let's do another one. **Lip** with a /t/ gives …'*
Encourage the child to answer.

If the child answers correctly, praise him/her and proceed to practice item C.

If the child does not answer or answers incorrectly, continue:
*'**lip**' with a /t/ gives …/t/ …**tip**. **Lip**… **tip**. **Lip** with a /t/ gives **tip**.'*

Praise the child's efforts.

⇒ *Non-word Reading sample*



D) Summary of programme content

Week	*Skill area*	*Examples of activities*	*Outcomes*
1-2	***Rhyme Discrimination and Production****.*	***Rhyming Monsters*** *– Place stimulus monster cards on table in vertical line eg. Monster with a cat. Place rhyming cards around table in random order. Ask each child to find a picture of a rhyming word, in this case /bat/ /mat/ /rat/and match it to the monster.* ***Rhyming Books*** *–For example Dr Suess and Commotion in the Ocean. Emphasise rhyming words and then encourage children to say the rhyming words after each set.* ***Rhyming Objects*** *-Place rhyming objects on the table. Ask children to take turns pairing objects that rhyme.* ***Rhyming Bingo boards, Rhyming 'Go Fish' games.***	*Children will recognise that rhyming words have the same ending sounds.* *Children will orally reproduce rhyming words when given a stimulus word.*
3-4	***Sentence segmentation into words and words into syllables***	***Clap the words*** *– Get students to create their own sentences (can assess their language development and provide an appropriate model) and then divide the sentence into words by clapping.* ***Compound word split and blending*** *– Explain that some words are made up of two little words put together. Use coloured cubes to illustrate the two parts.* ***Syllable break-up*** *– Explain that syllables are parts of words. Use children's own names/ friends/family names and clap the syllables within these. Then choose words with 1-3 syllables that are familiar (culturally) to the children. Whilst slowly saying the word, use cubes to represent each syllable. Eg. /cat/ - one cube; /monkey/ - two cubes; etc… Ask the children to place the correct number of cubes for each syllable they hear.* ***Animal syllable sort*** *- Place cards numbered 1-5 face up on a table to represent the number of syllables the child will hear. Then place picture cards of different animals face-down in a pile. The children select a card from the pile, say the word and place it down under the number card showing the correct number of syllables.*	*Students will orally segment sentences into words.* *Children will orally segment compound-root words* *Children will orally segment, identify and blend words into syllables.*
5-6	***Phoneme level - Initial, final and medial sounds.*** ***Phoneme isolation,***	***Name game*** *– Using the children's names – delete the first sound and replace it with another of their choice. Likewise with the final sound.* ***What is the first/last sound in_____?*** ***CVC jigsaw and Short vowel sound tubs*** *–*	*Children will isolate initial, final and medial sounds in words.*

	deletion substitution and segmentation to blending.	*with missing medial sounds. Check that the children know what a short vowel sound is.* ***Words missing sounds*** *– Ask children to say a word and then ask them to repeat the word without one sound. For example, Teacher: "Say dog", Child: "dog", Teacher: "Say it again but don't say /d/", Child: "og".* ***Segmenting and blending phonemes in CVC words*** ***Changing words/Spoonerisms*** *– Ask children to say a word, substitute one phoneme in the word for another, and say the new word. For example, explain that /cat/ with a /f/ makes /fat/; /dog/ with a /l/ makes /log/. Or say /fountain/ with a /m/ - /mountain/. Repeat process with final and medial sounds in words.*	*Children will orally substitute initial, final and medial phonemes*
7-8	***Phoneme – Grapheme level. Spelling and decoding CVC, CCVC and CVCC words***	***Letter people and real/nonsense words*** *– Write a letter on each child's paper (include a vowel or two). Ask two or three children to stand and hold their letter up. Ask the other children in the group to read the real or nonsense word formed.* ***Selected games from the WORD-SHARK 3 computer programme www.wordshark.co.uk*** *The level of complexity of the games will be adjusted to suit the individual child.*	*Children will begin to make the connection between sound-letter relationships*

Dear

X International School would like to offer your child the opportunity to participate in a literacy group 1-2 times weekly. The group will be run by Miss Jo Holdaway, an assistant teacher at the school who is currently studying for a Masters at the University of Oslo. She will be specialising in researching the reading development of primary school children who do not have English as their first language and who, as multi-lingual learners, could experience some challenges in learning to read. Past research has highlighted the positive impact that developing children's phonological skills, such as rhyming, blending and syllable segmentation can have on their ability to decode words.

Miss Holdaway will be working one-to-one and in small groups with the children for a 35-minute session each week with the aim of helping the children develop their phonological awareness and develop their emergent literacy skills. As this programme will be in conjunction with Miss Holdaway's University research, she would be most grateful if she could keep a record of your child's progress and include this in her research paper. The paper will be done completely anonymously of course, with no names or personal data being used. You will receive regular updates regarding your child's progress and are free to contact Miss Holdaway at Jo.holdaway@xinternationalschool.no at any time. The study is being approved by the 'Ombudsman for privacy in research' and will be managed by Mr. Rolf Fasting of the University of Oslo who can be contacted at rolf.fasting@isp.uio.no . Participation is voluntary and you are free to withdraw your child from this extra reading programme at any time without explanation. Please also be assured that children will not be removed from any specialist lessons in order to take part. The programme will run from October until January , and all personal information will be anonymised at this point. Please sign the consent form below to confirm if you would like your child to take advantage of this opportunity and then return the form to the class teacher by 8th October .

Yours Sincerely, Director

Child's name_____(Please print)

I would/ would not like my child to take part in the literacy group with Miss Holdaway. ☐

I give permission for results to be included in Miss Holdaway's research. ☐

*Signed*_____

F) PhAB Scores for each child (Raw and Standardised Scores-SS)

	Oct_06_raw	Oct_06_ss	Dec_06_rw	Dec_06_ss	Jan_07_rw	Jan_07_SS
Pupil A Pers						

Alliteration	5	90	8	99	7	100
Rhyme	2	78	13	105	11	100
Spoonerisms	0	81	4	94	3	88
Non-Word	0	0	2	90	3	91
RAN Pictures	222	69	154	77	200	69
RAN Digits	283	69	214	69	250	69
Fluency Allit	5	85	6	90	6	88
Fluency Rhy	4	98	12	130	7	107
Pupil B Nor						
Alliteration	5	90	8	99	7	93
Rhyme	8	97	6	93	6	93
Spoonerisms	3	91	5	97	4	94
Non-Word	4	96	13	109	12	108
RAN Pictures	237	69	207	69	215	69
RAN Digits	198	69	84	96	95	89
Fluency Allit	5	85	5	85	4	79
Fluency Rhy	5	104	3	93	5	104
Pupil C Spa						
Alliteration	5	90	9	103	8	99
Rhyme	9	100	15	108	13	105
Spoonerisms	4	94	9	105	9	105
Non-Word	2	90	13	109	13	109
RAN Pictures	134	90	91	120	99	113
RAN Digits	111	79	69	106	75	101
Fluency Allit	9	104	11	111	10	108
Fluency Rhy	0	77	6	108	5	104
Pupil D Punj						
Alliteration	2	81	8	99	8	99
Rhyme	8	97	8	97	8	97
Spoonerisms	3	91	9	105	9	105
Non-Word	5	98	11	106	12	108
RAN Pictures	148	81	115	101	120	98
RAN Digits	117	76	97	87	100	86
Fluency Allit	4	79	7	95	8	100
Fluency Rhy	9	120	7	112	9	120
Pupil E Tswa						
Alliteration	7	93	9	101	9	101
Rhyme	6	89	17	109	18	111
Spoonerisms	3	88	8	100	7	98
Non-Word	1	82	13	107	12	105
RAN Pictures	165	69	181	69	217	69
RAN Digits	204	69	216	69	203	69
Fluency Allit	6	88	11	109	7	93
Fluency Rhy	0	73	8	111	7	107
Pupil F Tam						
Alliteration	0	69	8	99	6	96
Rhyme	5	93	12	104	9	102
Spoonerisms	1	83	4	94	4	94
Non-Word	2	93	8	102	8	102
RAN Pictures	147	83	112	111	115	102
RAN Digits	128	73	90	92	92	91
Fluency Allit	11	113	10	108	7	95
Fluency Rhy	1	80	5	104	4	98